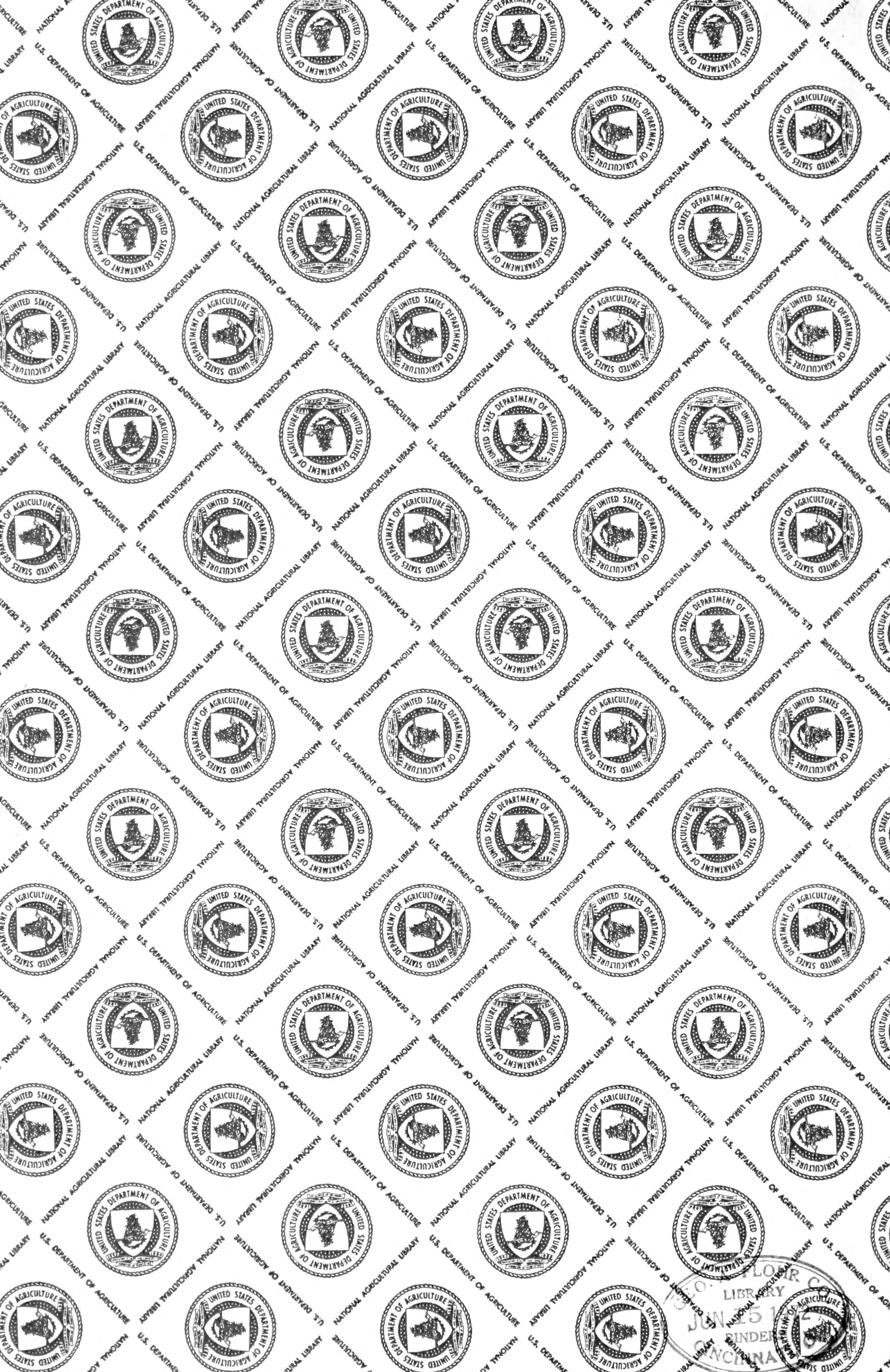
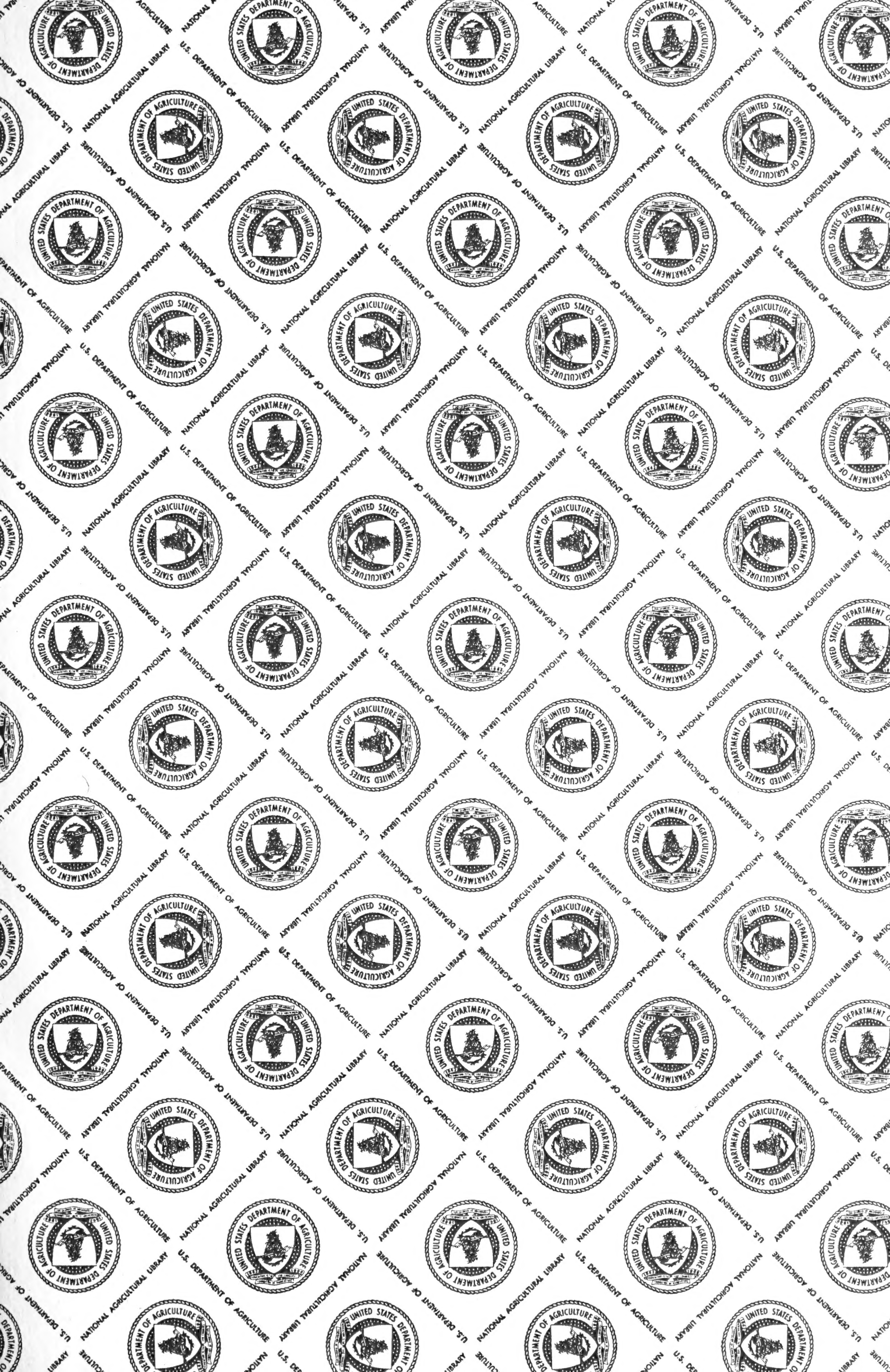


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THE COTTAGE GARDENER,
COUNTRY GENTLEMAN'S COMPANION,
AND
POULTRY CHRONICLE.

A JOURNAL OF HORTICULTURE, RURAL AND DOMESTIC ECONOMY, BOTANY,
AND NATURAL HISTORY.

CONDUCTED BY

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VOLUME XVIII.

LONDON :

PUBLISHED FOR THE PROPRIETORS, 20, PATERNOSTER-ROW.

1857.

TO OUR READERS.

THE six months during which the following pages were published have been to us so many months of uninterrupted growing prosperity; and to you, next to Him from whom alone comes the blessing needful for success, we tender our most grateful thanks.

Next would we direct the expression of our gratitude to those who have enriched our pages by their contributions; and here we hesitate how to record that two whom we should have included among their number have "ceased from their labours" in the sanguinary strife now fiercely waging in India. Upon their murderers—the murderers of their countrymen, their wives, and their children—the visitation must be signal and un pitying—not in vengeance for the dead, but as a warning and a safeguard round their successors. Let no suggestion of mercy save the life of a revolted rajah, a mutinous sepoy, or a traitor Brahmin: such mercy will be mistaken for fear. We know them well, and never met with an exception to the rule that, when a high caste Hindoostanee deserves punishment, both he and all around mistake the motive if that punishment to the overflowing is not inflicted.

In this utterance we are not straying entirely from our garden paths, for whilst we urge for punishment on the high caste criminals of India, we as strongly plead for tenderness towards its ryots. They are the gardeners of the land—allotment gardeners in the strictest sense of the term, paying in produce the rental of their very small holdings. We know them well too, and bear a willing testimony that they are a kind-hearted race, grateful even for justice, and not only capable but ready to receive instruction. For the future let the armed sustainers of our rule be obtained from among them, and we will wager a whole pergunnah of Malwa Poppy soil against a fragment of granite from the Himalaya that such sustainers will be faithful. It is too usual for Calcutta authorities to depreciate these children of the soil, but the low estimate they adopt is arrived at without any due experience of their character. Englishmen do not associate with the ryots, but with the high caste natives, and learn from them to estimate the ryots as of less value "than many sparrows."

We repeat that we know these ryots well; from among them come the mallees, or gardeners, and we shall always look back with gratification upon their efforts to serve faithfully and efficiently, as well as to excel at the Calcutta Horticultural Shows. At the Exhibition of 1842 were Celery, Cabbages (Red, Drumhead, and Savoy), Spinach, Turnips, French Beans, Endive, Carrots, Lettuces, Red Beet, Artichokes, Potatoes, Tomatoes, Peas, Cauliflowers, Water-cresses, &c., that would not have shamed an English gardener at Fulham. There were hundreds of competitors, about forty of whom obtained prizes (money and medals); and any contemner of the native character, looking upon the neatness and taste with which the various products were arranged, and the gratified looks which the prizemen wore, would have a somewhat altered opinion of them, though they have a swarthy skin; and though naked to the waist they bowed down before Miss Eden while she decorated them with their prizes. That they value the distinction, not merely for the intrinsic worth of the medal, was fully demonstrated by some of the competing mallees attending on this occasion with two and even *three* previously-gained medals suspended round their necks.

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WEEKLY CALENDAR.

D M	D W	APRIL 7-13, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
7	TU	PRINCE LEOPOLD BORN 1853.	29.493-29.446	59-39	S.W.	.04	24 a. 5	41 a. 6	4 52	13	2 8	97
8	W	Corn Salad (Valeriana).	29.260-29.183	53-35	S.E.	.06	22	42	5 2	14	1 51	98
9	TH	Crowberry (Empetrum).	29.305-29.273	56-42	S.W.	.30	19	44	rises.	15	1 34	99
10	F	GOOD FRIDAY.	29.463-29.143	60-41	S.W.	.04	17	46	8 a 28	16	1 17	100
11	S	Birch (Betula alba).	29.654-29.552	62-47	S.W.	.18	15	47	9 42	17	1 1	101
12	SUN	EASTER SUNDAY.	29.591-29.454	63-33	S.W.	.01	13	49	10 55	18	0 45	102
13	M	EASTER MONDAY.	29.632-29.585	67-36	S.	—	10	51	morn.	19	0 29	103

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 55.8°, and 35.9°, respectively. The greatest heat, 73°, occurred on the 9th, in 1844; and the lowest cold, 21°, on the 8th, in 1851. During the period 96 days were fine, and on 100 rain fell.

ORNAMENTAL GRASSES.
CHRYSU'RUS CYNOSUROIDES.
(GOLDEN-SPIKED DOG'S-TAIL GRASS.)



THIS annual Grass has roots fibrous and white, from which arise the flower-stems about nine inches high, having four or five knots, the three lowest of which are rather close together, and the stem produces one branch low down, or at least leaves, and commonly a panicle also. From one of the upper knots of the stems comes a leaf about two inches long, and an eighth of an inch broad, gradually tapering to a sharp point, keeled, smooth, but slightly rough on the edges. Leaves

about four inches long, narrow, tapering rapidly to a point, dark green. Sheaths of the leaves marked with channels, smooth, and clasping the stem. The panicle is on the top of the culm or stem, and is two or even three inches long, downy on one side, more dense than spreading. Spikelets in threes, barren; calyx two-valved, narrow, pointed, including many solitary, alternate, egg-shaped, blunt, concave glumes (chaffy flower envelopes); but, not having either the smaller valve, or stamens, or pistils, they do not, therefore, deserve to be called flowers, but rather are involucres. At the base of the spikelets are two flowers, with a narrow calyx as long as the florets, which are two together, the lower one being stalkless; its outer glume is narrow egg-shaped, with a long, straight awn proceeding from just below the tip; the inner glume is smaller, and very narrow. The upper floret is on a stalk as long as the lower floret, and is very like it, but smaller; there is the rudiment of a third floret. Anthers yellow. Pistils feathery. Seed single, narrow, oblong, about one-sixteenth of an inch long, pointed at each end, and inclosed in a membranous involucre. It belongs to the *Triandria Digynia* class and order of Linnæus. It flowers in July.

This very pretty Grass grows in tufts, throwing up many pale golden-coloured heads, compact, yet sufficiently open to be graceful, and rendered still more attractive by their bright surface and their light golden awns. It was known to the Bauhins and others of our early botanists, but was not brought into this country until 1770. It is a native of the south of Europe and the Levant.

It should be sown in patches in March, requiring a light, well-drained soil.

THE ENTOMOLOGICAL SOCIETY'S March Meeting was held on the 2nd of that month, the chair being taken by the President, W. W. Saunders, Esq., F.R.S., Treas. Hort. Soc. Among the works presented to the Society since the last Meeting were the publications of the Royal Society, the Royal Agricultural Society, the Berwickshire Naturalists' Club, the Entomological Society of Stetten, MM. De Saussure, of Geneva, Bohemann, of Stockholm, Frauenfeld, of Vienna, and Guerin-Méneville, of Paris, Newman, Stainton, and others.

Mr. Wallace exhibited specimens of the rare British Moth, *Laphygma exigua*, reared from the caterpillars

obtained from eggs deposited by the female in the preceding year in the Isle of Wight. They fed upon plantain, and were now for the first time described.

Mr. Douglas exhibited some small larvæ which he believed were those of some species of *Ptinidæ*, which he had found on shaking over a sheet some short grass, of the species *Dactylus glomerata*, cut off close to the ground. He had met with a considerable number of insects in this manner, which he accordingly recommended as an excellent mode of collecting in the winter months.

Mr. S. Stevens exhibited a number of drawings of the transformations of five species of Moths and Butterflies made by Mr. Plant in Natal. Amongst them were figures of the larva and pupa of a species of the genus *Acræa*, a group almost peculiar to Africa, and of which the transformations had been imperfectly known, having been confounded with those of the American genus, *Heliconia*, by Dr. Horsfield.

Mr. Westwood made some observations on the numerical variations in the joints of the tarsi of Beetles, with a view to determine the mode in which the different modifications were effected, and which he illustrated by sketches of the structure of the tarsi of a new species of *Oethoperus* brought from Madeira by Mr. Wollaston, as contrasted with that in the British species, which, from imperfect observations on these organs, had been formed into no fewer than three different genera. He had found that when some of the contiguous joints became soldered together the places of their articulation were indicated by the hairs and spines generally found at the tips of the joints. Mr. Lubbock confirmed this observation, having noticed it in various microscopical crustacea which he had examined.

Mr. Westwood also exhibited a species of Moth belonging to the genus *Nonagria*, brought from Madeira by Mr. Wollaston, which was extremely injurious in that island to the Sugar Canes, the larvæ burrowing into the stems in the same manner as the Borer Caterpillar of the West Indies and Mauritius. Mr. Westwood also exhibited a large Lepidopterous Caterpillar, communicated by Sir W. Hooker, from the banks of the Parema river, in Brazil, where it does great damage to the crops of Maize.

Mr. Wire exhibited a nearly black variety of the common garden Tiger Moth, of which a description by Mr. Newman was read.

Mr. Westwood communicated an extract from a letter from a friend in India, giving an account of the effects produced by the sting of a large Scorpion, together with the native mode of cure, which consisted in holding the inflicted part over the fumes of melted wax.

Mr. Stainton read an extract from the Journal of the Society of Arts containing an account, by Mr. Bashford, of a series of experiments made in India, with the view of improving the native breeds of the Silkworm, the cocoons of which are much smaller than those of the European varieties. Eggs had been imported from France and Italy, and the perfect insects obtained from

them were crossed with native specimens; but the experiments were not satisfactory. Mr. Westwood stated the results of the experiments made in Europe, which had produced such excellent effects in the hands both of M. Guerin-Méneville and M. Bronski; the cocoons obtained by the latter, especially, had attracted much attention in the Great Exhibition of 1851. It was mainly by great care in the selection of fine individuals of both sexes, and attention to the caterpillars during their early state, that these results had been obtained.

Mr. Douglas read a notice of a memoir by Dr. Hagen on the British species of the genus *Cicada*.

Mr. Baly read a paper containing descriptions of new exotic species of the genus *Doryphora*, and Mr. Pascoe exhibited a beautiful new species of Longicorn Beetle from Borneo.

GRAFTING GERANIUMS.

You recollect my telling about a collection of *grafted Geraniums* of the scarlet breed which was exhibited last autumn at the Crystal Palace, and you heard the other day what "THE DOCTOR'S BOY" wants to know about the process; but who would not be a doctor's boy if he could but graft Geraniums? I said I could graft them on the Walnut—a figure of speech; and surely I need never be a doctor's boy for that count. Grafting Geraniums is as old as the doctor himself. I saw the first of it at a place near Duddingstone Lock, where the people of Edinburgh go to skate, and where, had I not had a good, sound, thick skull, I should have been a dead man that very winter. No sooner was I in my skates than my heels went ten times faster than the rest of the body, and down I came in more senses than one.

Any man or boy who can graft an Apple scion on a Crab stock can graft Geraniums on Geraniums, and in as many ways, and "THE DOCTOR'S BOY" is answered in this sentence. The grafting is not the information that is required, but how to get the scion to "take," which is the least-known process to British gardeners of all the mysteries of propagation. There is not one gardener in twenty who can so graft a Geranium as to make as sure of success as if it were an Azalea or Rhododendron. I never grafted a Geranium but once, and that for no particular purpose that I recollect. The graft died, and I thought no more about it. The plants at the Crystal Palace looked as if they were in the second or third year after they were worked; but one could see in a moment where the secret lay, at least I think I did; but if I am wrong perhaps the gardener will be so good as to write a paper for us on the subject. I have a most decided objection to strangers writing to ask favours about things which have appeared in public print, else I would write to the gardener myself on the subject. I look upon him as among the very best gardeners in England for that one thing; for it is all but a new invention comparatively speaking. He is Mr. Peed, gardener to T. Tredwell, Esq., St. John's Lodge, Norwood. In case Mr. Peed does not take in THE COTTAGE GARDENER, some of our readers in that quarter who know him would do good service by giving him notice that some of the craft are getting daft and crazy on the subject, and that we are not likely to have peace day or night till we have a leaf out of his book on grafting all manner of Geraniums.

Meantime, my own observation of his plants would warrant the following process:—Cut back the stock to a place where the wood is neither ripe nor green. Gardeners know this part of every stock and stem

they grow, and others will guess it near enough. Do not graft very old hard wood or soft young wood, and let the stock be about the same. The plan and principle are very nearly the same as in grafting Cactuses, only that Cactuses, being very tenacious of life, may be used with little regard to ripeness. The *best* stock for grafting Geraniums ought to divide into two branches just where you wish to put in the graft; then, by splitting down between the fork one inch, or an inch and a half, it is ready to let in the graft in the shape of a true wedge, and if the bark on both edges of the wedge could be made to join the bark of the stock, all the better. If not make one side quite in union, bark to bark. Tie up with worsted thread, and clay with *clay paint*; that is, a lump of soft clay squeezed into the bottom of a small pot, then a little water over it, and worked with an old stumpy brush till it is as thick as cream, when it is the best thing in the world for grafts, and for killing scale insects on smooth wood; every coat of paint over a graft to be *dried immediately*, by shaking as much dry sand over it as will suck up the wet. Every graft ought to have two or three coats of this paint, and the paint on very soft wood, as on some root-grafting, ought to be kept free from damp till the scion and stock are united, and that is easily effected by having an inch of loose silver sand all round the parts, an inch above the grafted part, an inch below it, and one inch deep all round.

This is a most effectual way of securing half-herbaceous grafting wood from damp, and is equivalent to earthing up grafts out of doors. The sand is held round the grafts by folding a piece of paper like grocers fold soft sugar papers, in the funnel-shape way, the pointed bottom to be tied firmly round the stock a little below the graft, and to draw in the top to a barrel shape, and fill the barrel with half dusty peat and half dry sand, and that would hold against water and all damp much longer than the paper. The graft should not have many leaves on, and the top parts of the stock need not be stopped for the first three weeks after grafting.

Gardeners will take a plain stock without forking, cut off the head, split it in two and put in the graft, clay, sand, and support it in half the time it takes to write out the story for ordinary readers.

Geranium wood takes a very long time to unite, therefore side-grafting is not so good for them as this wedge-grafting; and very soft green shoots are so liable to rot or damp before they take that it is next to useless to try them. But the fact is we have our p's and q's to learn yet about them. These explanations, however, being founded on facts, which I could hardly misapprehend, may be relied on as sufficiently near the mark for an ordinary shot. D. BEATON.

STEPHANOTIS FLORIBUNDA CULTURE.

So much has been written about this extra fine favourite that I will try and meet the wishes of "A SUBSCRIBER" from *Ireland*, and another from *Bristol*, in as short a space as possible.

HISTORY.—This plant is a native of Madagascar, an island of which we are soon likely to know more, as it is being opened to the missionary enterprise, which will soon be followed by commercial intercourse and an advanced state of knowledge of everything connected with it. From the position of the island we should expect to find the plants such as delight in a high temperature and a moist atmosphere, and but little influenced by variations of the season. We can never treat such plants quite naturally, because we cannot give them the sunlight which they have at home in our winter months. Our object, therefore, should be to grow and ripen the wood of these plants in our finest, brightest weather, and to rest them in our dark winter months, just keep-

ing them healthy enough to start with vigour as the fine sunny days of spring arrive. Many failures have arisen from keeping the plant too warm in winter, and thus encouraging it to grow in comparative shade and darkness when it ought to be resting. The following remarks are based on successful practice.

PROPAGATION.—This is best done by slipping off close to the stem short, stumpy pieces about three inches long, removing, with a razor or sharp knife, a few of the scaly-like leaves at the base, and inserting the cutting in a small, well-drained pot filled half full with sandy peat, and the other half with silver sand, watered, covered with a bell-glass, and the pot plunged in a briskish hot-bed such as would grow early Cucumbers.

SOIL.—This we would regulate by the age and the state of the plant. For instance, in potting off a cutting we would use three parts of peat earth to one of loam, and a good sprinkling of silver sand. Were I turning a nice healthy plant in a four-inch pot into one of from six to eight inches, I would use about equal portions of fibry peat and fibry loam, with a little silver sand, and nodules of charcoal and old cowdung or leaf mould forming nearly another part. Were I turning such a plant again into a flowering pot or tub from twelve to eighteen inches in diameter, I would have three parts of the compost of good fibry loam in a rough state, that is, the great proportion should be little bits of the size of large peas, beans, and walnuts, and after breaking all with my hands I should very likely use a fine sieve, and give the loam a shake or two in it, so that the very finest matter should be got rid of. To this I would add one part consisting of equal portions of dried, old cowdung, leaf mould, bits of charcoal, and silver sand. The preponderance of loam in such a shifting is to cause the shoots to come strong and short jointed.

TIME OF POTTING.—It matters not what time during summer young plants are potted; but those intended to bloom should not be potted later in summer than it may be expected that the pots will be pretty full of roots before winter. If the potting has been neglected until spring the sooner it is done after fresh growth is commencing the better. Like all such free-rooting plants the drainage must be ample.

TIME AND AGE OF FLOWERING.—A nice plant from a cutting may be expected to bloom in the third year, earlier if extra care and coddling have been given to it, such as encouraging it to grow freely in a sweet, moist hotbed. Properly rested during winter it generally commences to bloom about May, or a little earlier, and continues on for several months, the length of the time of flowering depending much on the mode of

PRUNING AND TRAINING.—When the long shoots are cut back to a few well-ripened buds the young shoots that come from them will continue to bloom as they grow for most of the summer. If the shoots during the ensuing summer are grown rather thin, so that there is room for each leaf to have plenty of sunshine, then, after these shoots are well ripened in autumn and rested in winter, they will produce flowers from most of the buds, and thus there will be a greater profusion of bloom for a certain period, but it will not continue so long as by the other method. A mixture, combining longish shoots and cutting back, suits best for general purposes, where an abundance and a continuance of bloom are demanded. Provided the shoots are not too thick it matters little how the plant is trained, whether up or down a rafter, longitudinally along a house, round a barrel-shaped trellis, or over one with a flat surface.

PERSISTENCE OF FOLIAGE.—Like all true evergreens a few leaves will fade now and then, but there is no general *shedding* of foliage, as in a deciduous plant, unless there has been something very wrong in the treatment.

POSITION AND TEMPERATURE.—In its young state it greatly delights in being plunged in a sweet dung or bark

bed, where it can have a high temperature and a moist atmosphere. When it is in a large pot or tub it is less dependent upon this; but even then, if likely to be exposed to a cold temperature, it would be well to have the pot not far from the heating medium. A tub is better than a pot exposed, as the roots are not cooled so much by radiation. If the temperature is likely to average 45° for any great length of time, and the plant is in a pot, not only should the pot be placed near the heating medium in winter, but it would be all the better to be plunged or covered over with some non-conducting medium, such as moss or sawdust. Supposing, now, that the plant is beginning to grow freely, let it have a moist atmosphere, and a temperature ranging from 60° to 65° at night, and from 70° to 85° during the day, with sunshine. When the flowers open keep the temperature a few degrees lower and the atmosphere drier. When done flowering encourage the continuance of growth with heat and moisture; but by September give all the sunlight and heat possible, with no more watering than will keep the leaves from feeling the dryness. As the short days come, gradually lower the temperature until November, from which time to March the heat may average from 45° to 55° , with a rise of from 5° to 10° from sunshine. As the days lengthen in March and onwards, increase the temperature gradually and the amount of moisture. The warm vinery will do very well for it if not often below 45° in winter, for the heat of a vinery will just suit it in summer, and the dry heat in the autumn, for the benefit of the fruit and the Vine wood, will suit it likewise.

WATERING.—From what has been said it will be seen that copious supplies will be wanted in summer, and manure waterings will not be objected to; but very little will be required in winter.

To resume, water freely and give plenty of heat in the first part of spring and summer; ripen with heat and comparative dryness in autumn; rest in winter, and there will be no difficulty. R. FISH.

ASPARAGUS CULTURE.

Few vegetables have passed through more fashionable changes than Asparagus, and none present such a fewness of varieties. Many years ago it was thought impossible to have the ground too rich for this crop, and a heavy coating of earth in winter was also deemed necessary to protect it from frost. By-and-by it was shrewdly said that moisture and sand were necessary components in the mixture it was grown in, and finally salt in liberal quantities was recommended; besides which, much difference of opinion has existed on the condition it ought to present when sent to table, some insisting that every inch of the part cut ought to be green and grown above ground; others, and by far the greater number, preferring strong heads, with at least two-thirds of their length blanched as white as good Celery. Leaving the latter dispute I will at once proceed to the cultivation of the plant.

In most gardens the proportion of ground under Asparagus amounts to about one-tenth or more of the whole space, and it likewise is often treated with the best position. Nevertheless in some soils it is with difficulty reared, and does not at all do well. There seems a something inherent in some soils opposed to the well-being of Asparagus, and it is no easy matter to overcome these difficulties. Being itself a native of the seashore, salt enters largely into its wants; and perhaps the ingredient most opposed to its welfare is iron, which abounds in many soils. Chemists will give some hard names to the ingredients which do not agree with its welfare; but usually these ingredients may be partially counteracted by judicious means.

When there are gardens on a heavy, tenacious clay, in which the water, after standing some time, presents a rusty-looking scum at the top, such a soil generally contains iron, and is unfit for Asparagus, do what you will with it; but if it be determined to try, let the soil be thoroughly drained, and in trenching add as much of coal ashes as can be had; lime in this case may also be allowed. The roughest dung, stones, wood, sawdust, or chips, and similar refuse may also be incorporated with the soil, and the whole worked to a good depth, so that a wide range may be given to the roots. I would not advise too much dung to be buried, as it is better to add such substances afterwards.

I may here mention that I am no advocate for burying good dung in a wholesale manner two feet deep for Asparagus, for it often becomes a solid sour mass in wet ground before it is occupied by the roots of the plant. It is certainly better to drain the soil well, and in trenching to mix a something that will tend to keep the ground open for some years. Soft stones, road sand, coal ashes, and refuse from the carpenter's yard are all useful things, and at the same time I would advise abundance of drain-pipes laid about two feet deep; these are to act as air-drains (deeper ones may take the water). These air-drains are to allow the ground to become dry and sweet by air being allowed to circulate through them, to assist which they ought to communicate with each other, and several outlets be provided to the open air. It is hardly necessary to say that a large importation of soil of a suitable kind for Asparagus will be beneficial, but do not remove any of the natural soil to make room for it; rather let the beds be raised above the surface by heaping the new material on the old, for it is not unusual to find the good soil that is buried so deeply under the surface converted into the same strong, tenacious loam which prevails all around it, whereas elevating the beds will materially check that, and the result be more satisfactory.

The preparation of very light soils must be equally liberal if good Asparagus be wanted; trenching and removing all useless stones, hungry sand, and gravel, and the substitution of a more generous soil for it, with a liberal allowance of dung or other good manure, and in summer a plentiful supply of liquid manure and salt. We sometimes see good Asparagus even on dry, chalky soils, which do not answer well for many other crops; but the best of all situations for this crop are the rich alluvial soils which form the levels bordering rivers. Thus the banks of the Thames are, perhaps, the best of any for the growth of this and some other vegetables.

When the ground suits this vegetable it is not by any means prudent to plant it thickly. Single rows about three feet apart have been recommended as producing the best heads; but it is more common to plant two rows in a bed, say two rows two feet apart, and then three feet before another row takes its place. I would not advise the plants to be less than fifteen inches apart for the single-row system, and more than that for the double rows; the ground in both cases to be wholly devoted to the crop, and due care taken to prevent weeds finding their way there, more especially perennial weeds of all kinds.

Although much of the general success of Asparagus culture depends on the care and liberality displayed in the first formation of the beds or plots, still it is not to be inferred that after attention is to be dispensed with. On the contrary, Asparagus, more than most plants, is benefited by a judicious application of manurial substances in summer. Liquid manure may then be administered with advantage, as likewise may salt. The latter is best applied in small quantities during rain, or immediately before it, and during the whole of the growing season this may often be repeated. One thing, however, I would not by any means allow, namely, the beds to be

covered with a deep coating of dung or other substance in winter, as the soil is rendered sour and unfit for vegetation when excluded so long from the winter frost and air; in fact, it is reduced into a sort of subsoil, and is poorly repaid by the supposed benefit it derives from the soakings of the dung into it, as the benefit of the latter might be accomplished in a month of wet weather, and ought then to be removed; but covering up is but little adopted now.

In the general treatment of *Asparagus* it is prudent not to cut it too early, nor yet too much, more especially at first. Allowing young plants to attain a good size and strength before cutting materially influences their after welfare; and by carefully attending to them in the way of a liberal allowance of liquid manure, salt, &c., in summer, they will perfect buds capable of producing heads that will well repay the labour they have cost, and as the plants are supposed to be thin they will not so easily die off as when planted closer. The other routine work has been noticed in other places, and need not be repeated here.

J. ROBSON.

A SKETCH OF THE DUKE OF DEVONSHIRE'S GARDENS AT CHATSWORTH.

(Continued from page 427, Vol. XVII.)

RETRACING our steps, or partly so, back through a great variety of delightful scenery that powerfully reminds us of the words of the poet who sang of Chatsworth in the days of the Stuarts,—

"Here wood and water, sun and shade contend,
Which shall the most delight, the most befriend,"

we now reach the lawn in front of the mansion, and, passing the fine walk of trees known as Lady Granville's, come full upon the Emperor fountain. This fine fountain, which richly deserves its name of the Emperor, throws a magnificent jet of water to the height of 267 feet, and the pressure is so great that the water is calculated to escape at the rate of a hundred miles per minute. It is situated in a long sheet of water stretching away from the southern front of the mansion, and the intermediate space, or terrace, of several hundred yards up to the windows, is occupied on either wing by a variety of plants interspersed with sculptured figures, the most conspicuous of which are, perhaps, those of Neptune and Hercules on the margin of the lawn adjoining the water, and the once celebrated "old" or "sea-horse fountain" occupies the centre. This has a jet of nearly four feet, which was in its day considered extraordinary. Now, however, it is but a mere accessory to its magnificent cousin, the Emperor. The effect on a bright day of all the fountains and falls in action is delightful. The brilliant Emperor, throwing his immense jets between two and three hundred feet high, together with the series of sparkling cascades from the summit of the beautifully-wooded hill above, and those of the temple, steps, Palais Royal, and sea-horses below, may be described as constituting a work of nature and art combined really enchanting. These waterworks, indeed, we may state, are wholly a work of art, most materially aided, however, by the beautiful and romantic scenery surrounding them, which, in point of fact, tends to throw a charm over everything connected with the grounds at Chatsworth; and before leaving them, which we do through a beautiful Italian garden fronting the western side of the magnificent pile long and almost universally known as the "Palace of the Peak," we cannot forbear, and hope to be forgiven, mentioning an historical circumstance connected with the spot. It is a compliment, and certainly a very fine one, that was paid upon leaving Chatsworth by the Count de Tallard, who had been entertained here for a few days by the then Duke of Devonshire. "When I return," said he, "to my own country, and reckon up the days of my captivity, I shall leave out those I spent at Chatsworth." A Paxton had not then, however, arisen to shed around it the light of his genius; and could the Count who paid this splendid compliment to the then owner of the house at Chatsworth now revisit it, he

would doubtless gaze with redoubled admiration upon the new beauties added and unfolded by the light and march of modern and well-directed improvement.

In quitting the grounds for the kitchen gardens, which we do by handsome gilt gates and a massive gateway, we are almost tempted to express ourselves something like Loudon, who, although so prone to vituperate, could not help exclaiming, upon leaving Chatsworth, "It is altogether the finest place I have ever seen." Be this as it may, however, for our own part in leaving it we do so not without a consciousness of our inability to give anything like an adequate idea, in this short and imperfect description, of the manifold attractions of a spot well deserving a pen far more picturesque and glowing than our own.

Looking to the left upon leaving the gateway, we catch a glimpse of a curious castellated structure near the Derwent, embowered with trees and surrounded by a moat, known as "Mary's Bower," from its having been an occasional resort of the beautiful but ill-starred Mary Queen of Scots. The Derwent here forms a fine broad river, and a fall or two a distance below. The soil of the park, although somewhat varied, is chiefly (including the gardens) a rather light, clayey loam, based upon an alternating subsoil of sandstone and slate. To the right of our road, rising high above the hanging wood of the hill, is the "Hunting Tower," from which the ladies in the olden time enjoyed a view of the stag-hunting over an extensive area of the park below. The kitchen gardens, to which we are advancing, lie near the boundary of the park, and cover an extent of twelve acres; those we have just left 367, embracing lawns, fountains, shrubberies, &c. The approach to those we are just entering is by an iron gateway adjoining a very elegant lodge lately erected. On the right of the carriage-drive leading up to the houses is a deep border of standard Roses. The bare appearance of the border and lower parts of the stems, generally seen in a collection, is here completely taken off by planting dwarf Laurels among them, the plants of which, without seemingly deteriorating from the quality of the flowers, add greatly to the effect by completely covering the borders, and effectually filling up with foliage what would otherwise present only a barren array of stems.

Winding round the drive, we enter, as it were, the gardens again through an archway communicating with the houses of the plant department. From this archway a carriage-drive, and a succession of others through the division walls, give a view of the entire extent of the gardens. On the left hand is the greenhouse, a long and extensive building, gay and bright with a great variety of hardy greenhouse plants and shrubs, and filled up at the back with plants of Rhododendrons, Acacias, Azaleas, &c. The roof is on the ridge-and-furrow system, and trained up the pillars and along it are plants of Tacsonia, Fuchsias, &c., the pendulous shoots and flowers of which, during the whole of summer, give it a particularly light and airy appearance. To the right of this house is the stove or "Amherstia house," so called from its having been constructed for the growth of a specimen of that splendid plant. It now contains a fine plant of the *Artocarpus incisa*, or Bread-fruit tree, and the centre pit is almost filled with a collection of *Ixoras*, *Rondeletias*, and other stove plants. On the front shelf are some good specimens of various others, among which is a large one of the new and beautiful *Meyenia erecta*, imported here direct from Africa. The *Ixoras*, however, are the chief attraction, and their clean and healthy appearance does credit to the skill and ability of their manager. The back of the house is trellised and covered with creepers, among which the *Cissus discolor* is conspicuous, and the beautiful *Hexacentris Mysorensis* forms a fine plant upon one of the pillars.

Before entering the house now immediately in front of us (the Victoria house) we will just glance along the undulating banks fronting the greenhouse and Sir Joseph Paxton's residence. The visitors to these gardens in summer cannot avoid being struck with the beauty of these curved and undulating banks or borders, filled as they then are with scarlet Geraniums, Calceolarias, Verbenas, and other bedding plants, arranged in accordance with their height and colouring, backed at the top with shrubs, and presenting altogether a very brilliant and animating appearance. But the Victoria house is now before us, the germ of that

mighty building * which so much aroused the attention of Europe, and so widely spread the fame and reputation of its architect. Its construction has been so often described, that a minute description of it again is hardly necessary. A good idea of its general appearance may, perhaps, be formed by describing it as small sections or portions of the lower part of one of the wings of the old Exhibition, to which it certainly bears, in some particulars, a strong resemblance. It is sixty feet in length by forty feet in width, and about twelve feet in height from the trellised walk inside. It is raised upon a basement wall four feet six inches in height, in which are a great number of ventilators, and the house is approached by a flight of six steps. We ascend and enter the building. It is occupied almost wholly by the tank of the *Victoria regia*, the regal Lily of the tropics. The tank is thirty-three feet in diameter, with a smaller one within it some fifteen feet across, and four or five feet in depth. The plant is usually placed in it about the middle of April, and it attains its full growth and is generally in flower on the 1st or 2nd of July. The large rose-tinted flowers, when fully expanded in the evening, diffuse a fragrant and agreeable odour throughout the building. The diameter of the largest of its immense leaves last year was six feet one inch, and, to give some idea of its rapid growth, we may state that one of these leaves increased its diameter by one foot nine inches in twenty-four hours. The four corners or angles are occupied by small tanks of *Nelumbiums*, *Nymphaeas*, and other aquatics. These tanks, however, are now quite dry, and the centre one is filled with Camellias, Azaleas, and other greenhouse plants. Nothing, in fact, is left except a small plant of the *Isolepis pygmaea* of all the plants that filled and decorated the house during the summer.

Descending the steps we turn to the right, and enter the "old aquatic," or, in fact, a stove and aquatic combined. It is a ridge-and-furrow curvilinear building, containing a large square tank in the centre, and is somewhat celebrated from its having been the house in which the *Victoria regia* first flowered in England. Here are some fine plants of the *Nymphaea Devoniana*, and a quantity of other aquatics round the edge of the tank, and supported upon inverted pots within it are a number of Ferns, Mosses, Marantas, &c., together with some fine plants of *Thyracanthus rutilans*, which seem to enjoy the situation. This house is profusely furnished with creepers, and on the trellis at the back large trusses of the beautiful *Ipomæa Horsfalliae*, with its rich glowing flowers and deep black buds, appear to great advantage.

Leaving this house, upon our right are the pits for bedding plants, a large span greenhouse and stove for growing specimens for other houses, and a small propagating house, in which, among other choice plants, we observed the *Ouvirandra fenestralis*, or Lattice-plant, with its curious network outlines of a leaf; a vigorous plant of the *Brownea Ariza*, and another of *B. speciosa*; the fine-leaved *Locheria magnifica*; the red-veined *Hæmadietylon nutans*, and perhaps the prettiest of all miniature variegated plants, the little *Sonerila margaritacea*.—J. H. C.

ERROR.—At page 426, column 2, line 14 from the bottom, "yards" has been inserted instead of "feet." It should have been "330 feet in length," and "7 feet in breadth."

(To be continued.)

HOYA BELLA.

At page 399 of the volume just closed of THE COTTAGE GARDENER I see my name is brought in question, by "CEDO NULLI," respecting the remarks on *Hoya bella* which appeared at page 202 of the same volume. "CEDO NULLI" has fallen into an error respecting the statements I put forth in those remarks, and perhaps I cannot do better than to explain to "CEDO NULLI" the whole history of the "pot of sunk plants," and likewise give a little information about the second plant which I had, of which "CEDO NULLI" has made no mention.

I bought a small plant of *H. bella* in the autumn of 1851,

* The Exhibition of 1851.

and grew it into a good-sized plant. In May, 1854, this *Hoya* was staged as one of twelve plants which took the first prize at the Leeds Horticultural Exhibition. If "CEDO NULLI" saw the plant then I have no doubt but he admired it, as well as most other people who saw it. It was grown on its own roots, and on a single stem, but potted in the usual way, viz., the collar rather below the soil, which is a bad practice, as I found out to my sorrow; for I had not got it home from the Show a fortnight before the plant was to all appearance dead. I would have willingly given up the prize it had played such a conspicuous part in helping me to take to have saved my plant. I took it to the potting bench, with the intention of throwing it away after satisfying myself, if possible, what was the cause of its going off so suddenly. I found the bark round the collar of the plant quite decayed, and the stem dead, although the branches had some life remaining in them. The idea struck me that probably these branches would strike root if treated as cuttings. This was no sooner thought of than done. I cut them off above the dead part, and put them into a small propagating box at one end of the stove. In less than one month several of the largest branches rooted, were potted, and plunged in the bark bed in the stove, making a respectable appearance as a plant, or a "pot of plants" if "CEDO NULLI" likes to call it such. No matter, I saved my plant and my credit as well; but the branches were not sunk in the pot as "CEDO NULLI" asserts them to have been. Before the growing season was over the "pot of sunk plants" was repotted with the collars well above the soil, as detailed at page 202, and from that day to this I have never lost a plant of *Hoya bella*.

At the time I potted the "pot of plants" I also potted a single branch into a small pot for fear of a mishap with the larger plant. This plant I grew on as fast as I could, in the same way as I did the larger pot, until about eighteen months since, when I exchanged it for another plant; but it is still in the neighbourhood, and if "CEDO NULLI" will call on me I will take him to see it, and if he can find a better plant, either worked or upon its own root, within five miles of Leeds, I will make him a present of the best *Hoya bella* that he can purchase of any nurseryman within that same distance. "CEDO NULLI" says my "plant looked like *Russellia juncea* would if tied up to a stick." Of course it was tied up to sticks; but I think "CEDO NULLI" must have made a mistake here, or else he does not know the plant *Russellia juncea*, for certainly there is a very great disparity between *H. bella* and *Russellia*, and it is a mere matter of taste whether the *Hoya* is grown as a half standard, with one stake for the centre shoot, or whether it is grown into a low bush, with sticks to support the longest branches.

"CEDO NULLI" thinks *H. imperialis* would be the very worst of stocks, as "it would be too strong for the weaker-growing *H. bella*, and would kill the scion." Perhaps it may; but surely if the "weaker-growing *H. bella*" will make "such a good plant (when grafted) in eighteen months, with six dozen heads of bloom at one time," there is no fear of the *imperialis* outgrowing the scion. So far as my observations extend I think there is a probability of the scions outgrowing the stocks now in use; therefore my reason for advocating the *imperialis* as a stock, that is, if stocks are required. I, for one, should like to see "CEDO NULLI" detail his mode of growing *H. bella*; but let me request of him not to sign a fictitious name if he writes again, but to give his proper name and address, so that the public may know what amount of credit is due to him.—WILLIAM DYMENT, Headingley Leeds.

["CEDO NULLI" had better accept Mr. Dymont's invitation. We will not insert anonymous attacks upon that gardener, but if "CEDO NULLI" has any facts to communicate we shall be glad to hear from him.—ED. C. G.]

FEEDING IN COMMON HIVES.

DURING inclement spring weather many stocks in common hives require feeding more abundantly than can be accomplished by pipes of elder and other primitive contrivances. A good plan to feed stocks in the common bell-shaped hives

is to cut a small hole in the top, drive three flat-headed nails around it, standing up half an inch; on these lay a piece of empty comb, the upper cells of which can be filled with syrup, and the whole covered closely with an empty hive. The bees will readily take down a pound of syrup a day. When not required a cork secures the hole.—W. B. TEGETMEIER.

PURPLE AND WHITE HONESTY AS BEDDING PLANTS.

IN THE COTTAGE GARDENER, March 17th, "THE DOCTOR'S BOY" requests communications on early bedding plants. I employ the purple and white Honesty (*Lunaria*) with great success in this department; and as it is, like many other useful and ornamental plants, very much neglected, or perhaps overlooked, I send this memorandum of its application, hoping to extend its cultivation with those who, like myself, value early and simple flowers.

I sow the seeds at the usual time in a reserved border. In the course of the summer they become strong plants, and when the tender plants, Geraniums, &c., require housing they are put in their places. In April and May they present a fine mass of bloom, which would continue beyond the time the half-hardy plants are ready to succeed them, when they are taken up and thrown away, being only biennials. In shrubberies, or where the ground is not wanted for other things, they are ornamental in seed and after it is shed, and never require renewing, from the seeds sowing themselves, as no doubt is the case on the islands in the Zoological Gardens at Clifton, where my attention was first drawn to the Honesty, from seeing there its large masses of purple bloom. I had some difficulty in procuring the white from seed; but I now have plenty, and a striped sort originated in my garden from the two kinds blending or hybridizing.—FLORA.

THE STEWARTON BEE BOXES.

IN common, I presume, with all readers of THE COTTAGE GARDENER who are bee-keepers, I experienced a wish to know more of the Stewarton bee boxes, and of the system pursued in that locality, than could be acquired from the very interesting letters of the gentlemen who first called attention to them in the pages of this paper. Owing to the courtesy of Mr. Eaglesham, who has been at some trouble in replying to the numerous queries that I have forwarded to him, I am enabled to describe not only the boxes, which are now before me, but the system of management to which they are subservient. I will firstly describe the formation of the boxes, of which three, precisely alike in all respects, constitute a hive. Each box is octagonal, or eight-sided, the inside measure being thirteen inches and three quarters across from side to side, or from back to front. The height of the box, measured inside, is five inches and three quarters. The bottom is perfectly open. The top is quite flat, and consists of seven fixed bars, each one inch and a half wide, placed parallel to each other in the direction from back to front. The spaces between the bars are three-eighths of an inch wide, and are capable of being closed by strips of wood, which slide in grooves made in the sides of the bars, and which can readily be drawn out behind when required. Across the middle of each box, at half its height, is a cross bar serving to support the comb. Windows with sliding shutters are placed in the back and front of each box, and an entrance is cut out of the front, three inches in width by half an inch in height, with a slide to close it to any required extent. In addition to the set of three boxes a shallow honey box, three inches and three quarters in depth, and without an entrance in the front, but otherwise made in precisely the same manner, is used as a super. It is hardly requisite to state that these boxes are used on the storifying system, consequently they are furnished with buttons and hooks for the purpose of securing them together. The general outline of the management is as follows:—A swarm is hived into two boxes communicating with each other. When these are nearly filled with comb a honey box is placed above, neatly furnished with guide combs on the bars. When

the bees are fairly at work in the honey box the third body box may be added *below*, to give increased room and prevent swarming.

In the winter this third box is removed, and the comb it contains left in, as it possesses a value well known to every skilled bee-keeper. Feeding when required is liberally pursued, enough being given at once in the autumn to last till spring. The feeding box, eight inches square by one inch and a half deep, is divided by strips of wood into divisions half an inch wide. This is placed on the top of the hive, covered over with a box, and the slides withdrawn to permit the bees to ascend to the food.

The present article is merely descriptive, to enable those who are interested in the subject to form their own conclusions as to the value of the boxes. I have, therefore, entered into no criticism respecting them. I may, however, remark that they are essentially *working boxes*, and not childish playthings, and in good seasons, I doubt not, will yield a very large honey harvest. They are remarkably well put together, and so reasonable in price that I do not understand how they can pay the expenses of the manufacturer.

I shall hive an early swarm into the set that I have, and will communicate the result through the columns of THE COTTAGE GARDENER.—W. B. TEGETMEIER.

A THING THAT "IS DONE."

By the Authoress of "My Flowers."

SHALL I be forgiven if I bring before my readers' special notice the case of a gardener which has but lately come to my knowledge? It is always painful, but very salutary, to bring home to a class or an individual failings or sins peculiar to their position or pursuit, because we all know how blind we are to our own faults, or else how we ruin ourselves by making light of them. Dishonesty is, dear reader, in the heart. It is not in this profession, or that business, or in this or that situation, whether the temptation is ever so great, or the opportunities ever so inviting. Reader, it is the corruption of our nature—the root of bitterness deep-seated in our hearts—that makes us sin, and leads us in that way, the end of which, unless repentance meets us, is death. The man that steals, or defrauds, or deceives in humble life would do exactly the same were he placed in the peerage. It might not be cabbages, or shop goods, or petty larceny; but it would be in matters of business, transactions of honour, affairs that take place between friend and friend, man and man, lawyer and client, debtor and creditor, master and man. Ah, dear readers, do not some among you feel a sudden dart in your inner chamber as *secret doings* flash upon your memory—*doings* that no eye has seen, no finger has touched, but that *we* know have been done snugly and quietly?

To my subject. A lady who loves her flowers with real enjoyment, and who has lately changed her residence, brought with her a young man as gardener who had been for some years in her service, and for whom she felt quite a regard. He had been, in the first place, taught the grammar of his business under the old gardener, went to finish himself under a first-rate nurseryman, and returned to occupy the old gardener's place, who died just before William's time with the nurseryman expired. The old gardener had been a very honest, hard-working, matter-of-fact affair, but by no means an *artist*; knew little of the floricultural branch, and was so wedded to old ways and systems, that his mistress, after striving in vain to enlighten and enlarge his mind and beautify her borders, fairly gave it up, and made the best of what she could in no way overcome. Great was her delight when William entered upon office, deeply skilled in every modern improvement, master of his work, and young and active too. The garden, as by magic, burst into flower; endless varieties dazzled the eye; successions of crops, both of flowers and vegetables, trod on each other's heels, and plenty decked the land. The sitting rooms were decorated too, and, altogether, the change astonished and charmed the lady's eye. William married, and his wife having been a young servant in the same family during his boyish days there, all seemed settling down comfortably and satisfactorily.

In the course of a twelvemonth events occurred which induced William's mistress to change her residence, to reduce her establishment, and occupy a smaller house. She gave some of her servants the offer of remaining with her, among whom she did not include William, because so clever a gardener was not exactly what she should now require; but William begged hard to follow her. He would take care of her cows and poultry, make himself generally useful, and do everything he could to make up for higher wages than another class of workman. Mrs. Grant was pleased with his wish to accompany her. She had always a high opinion of him, and consented to his wish. William packed up all the pet plants, seedling Apple trees, and little floral treasures of the garden and greenhouse, brought them carefully to their new home, and watched over them tenderly. Mrs. Grant felt quite confident of William's capability and trustiness, and feared no evil.

It so happened that both the cows were out of milk together, and William daily fetched a supply from a neighbouring farm. Mrs. Grant complained of the poor, thin milk; but it was winter, and possibly this might account for it. Mrs. Grant accidentally mentioned this to a friend, who assured her that the milk from that farm was *excellent*; she herself used it, and it was rich and good. This was very strange. William was desired to speak about the matter, and to beg that the best milk might be sent. From that day the best milk came.

The hens now began to lay, and cackled cheerily; but Mrs. Grant wondered why so few eggs were brought into the house. The coachman looked "unutterable things," and begged his mistress to get a padlock for the hen-house, and lock it up. She did so, and found double the number of eggs that daily came into the house. This awoke strong and alarming suspicions. Could it be? *Could* William be a thief? Matters rapidly came to a crisis. The coachman spoke out; the maid servants spoke out. They openly accused William, and said they could not stand silently by to see their mistress robbed. He was unfaithful to the trust she had reposed in him!

Mrs. Grant was really deeply distressed. She had thought so well of William and his wife, who must have been the receiver of stolen goods, that her very heart ached at their treachery. This accounted for the poor, thin milk, watered, of course, at his own cottage on his way back, and for the disappearance of potatoes and wood, which had frequently and strangely taken place.

The coachman told his mistress that William had often been seen taking vegetables home from their former garden; but he could not have believed he would rob in this manner. "Why did you not tell your master when such things were seen?" asked Mrs. Grant.

"Well, ma'am, I know what gardeners are," replied the coachman mysteriously; "I know taking fruit and vegetables is *done* among them. They think it a kind of perquisite, and it is understood and done everywhere. Then master was alive, and he could look and protect himself; but I can't stand by and see a *woman* deceived and robbed," added the coachman, with a flash of manly regard for the weaker sex that did him honour; "I have told William so to his face, and I never will see it done by him or anybody else."

Mrs. Grant performed a painful task; she charged the robberies home to William. He confessed them with some hesitation and shame, and promised, if forgiven, to steal no more; but Mrs. Grant was firm, and, what is more, *faithful*. She spoke of his soul, and not of the body; of eternal consequences, and not worldly ones. She laid before him the *sin*, and implored him to seek the pardon of an offended God, and not an injured mistress only. She pointed out the nature of the offence, and the only "way" to pardon and peace. O that *all* masters and mistresses would do likewise! If it is an "understood thing" that gardeners take perquisites without permission, there is an item that wants revising in their craft. See to what it leads! the drop that oozes through a chink swells to a torrent. There is no *little* sin, no *little* theft, no trifling evil, that shall go "so far and no farther." There is no *secret* sin either. One Eye looks down on every deed, and brings it to the light. One Foot unseen tracks and traces with unerring skill every devious way. And for what a worthless gain the immortal soul is perilled!

Two or three eggs! A little drop of milk! A basketful of cabbages and plums! O readers! pause one moment and reflect: "What shall it profit a man if he gain the *whole* world and lose his own soul?"

William and his wife returned crest-fallen to their own friends, and *talk* of going to Australia. But they cannot flee from God's wrath, nor escape detection in the new country any more than in the old. Readers, "a good name is more to be desired than great riches." Let *all* classes lay this to heart, and let them not, for a mess of pottage, sell their birthright. The day cometh that shall "burn as an oven." Let us not destroy our own souls.

PHOTOGRAPHY FOR GARDENERS.

TREES, PLANTS, &c.

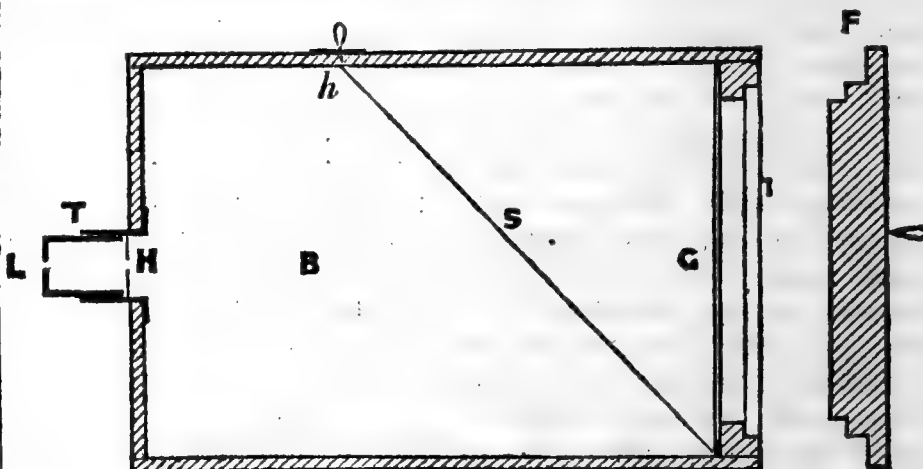
(Continued from page 448, Vol. XVII.)

Our friends who followed the former instructions have, no doubt, by this time a good collection of photographs. An oversight in the last paper needs correction. In the *blue process* the mucilage of gum arabic should be added in the proportion of *ten drops to the ounce* of ferro-prussiate potash solution.

In the photography of *trees* and *plants* a PHOTOGRAPHIC CAMERA is necessary. The price of these at the opticians' shops ranges from £1 10s. to £50, according to the amount of labour that has been expended on the lens with which it is mounted.

It will be our object to describe an arrangement quite as available as a more expensive instrument, and which can be manufactured by any of our readers possessing a tolerable amount of ingenuity for a sum not exceeding *five shillings*.

The accompanying drawing will best explain its construction.



B.—A strong and light-tight box, eight inches by six inches, by six inches deep, forms the body of the camera. The whole of the inside must be painted a dead black.

H.—A circular hole to admit

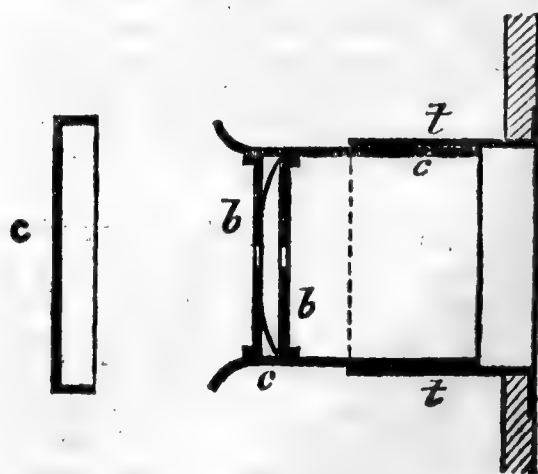
T.—The lens tubes.

F.—The prepared paper frame, which fixes into a rabbeted opening at the end of the camera opposite

L.—The lens.

G.—A ground glass for focussing. This is hinged by a piece of leather to the top of the camera, and when not in use is drawn up into the upper part by

S.—A string passing through a hole in the top, and looping on to a hook at the side of the paper frame. The hole (*h*) must be surrounded with a piece of green baize, to prevent any rays of light from entering the box.



LENS.—A plano-convex glass of nine inches focus is fixed in a tube of brass, tin, or cardboard (c), and on each side of it a disc of blackened cardboard (b), the same size as the lens, each having an opening in the centre a quarter of an inch in diameter. This slides in another tube (t) attached to the woodwork in front of the camera. c is a moveable cap for covering the lens when necessary.

In constructing both camera and lens it will be well to remember that a very small amount of light passing elsewhere than through the lens will be fatal to the success of a photograph.—E. A. COPLAND.

(To be continued.)

HOLLY STEALING AT CHRISTMAS.—At Aylesbury Assizes *William Ginger*, aged 21, and *William Dukes*, aged 18, were indicted for stealing twelve branches of a Holly tree, growing in the pleasure ground belonging to Hartwell House, the residence of Dr. Lee, the said branches being worth more than £1, on the 16th of December last. A second count charged the prisoners with damaging the said tree to the extent of more than £1. The gardener of Dr. Lee proved that the tree in question was an old and very handsome variegated Holly, which was greatly prized by Dr. Lee. It grew up nearly twenty feet high in four stems, and was perfect on the 16th of December, on which day the two prisoners were seen walking in a parish road close to the pleasure garden. On the 22nd it was discovered that many of the upper branches had been rudely torn off, and the tree entirely spoilt. The gardener, suspecting that he should find some of his tree in Aylesbury Christmas market, went there, and at two stalls he saw some branches which he recognised, and eventually identified by matching them with the broken stumps. Both the persons in whose possession these branches were so found stated, and now proved, that they had bought them from the two prisoners. It further appeared that the pleasure ground in which the tree grew was separated from the house and garden by the road in which the prisoners were seen, and that it was connected with the garden by a tunnel under the road. Mr. Mills submitted that the case was not within the Act, as the ground was separated from the house and its garden by a public road. The Chief Baron having overruled the objection, as the existence of the tunnel showed that the ground in question was occupied with the house, and brought it within the words "belonging to the house," as laid in the indictment, the jury found both the prisoners *Guilty*, whereupon they were both sentenced to imprisonment for one month, the learned and amiable prosecutor having recommended them to mercy.

THE STEWARTON SYSTEM OF BEE-KEEPING.

[MR. WILSON has favoured us with the following. It was prefaced with some comments upon Mr. M'Lellan's previous communications, which we omit, because we are all in pursuit of truth, and in that pursuit our only footing should be upon facts.—ED. C. G.]

I wish heartily to respond to the suggestion that a statement of our practices would be more acceptable than such discussions.

At first the thought of undertaking to give a detailed account of our system of management rather alarmed me, as I have not much spare time at command, while writing to a public journal is something of a task, because quite a new occupation. After due consideration, however, a plan has occurred to my mind which I anticipate will give a fair idea of our doings, and being spread over a season it will cause me little inconvenience.

My plan is to number three hives respectively 1, 2, 3, and at the beginning of the ensuing season to register their condition, weight, &c., and report to THE COTTAGE GARDENER. At the end of each subsequent month till the close of the season I purpose to note the particulars of management, and the state of the weather during the preceding four weeks; also the weight of each hive at the date of report. By such means the progress of three

colonies would be shown, the various manœuvres incidental to our system brought to light, and the results of the season's labours recorded.

I beg to inform "A COUNTRY CURATE" that the bee boxes advertised by Mr. Eaglesham I know to be good, but two of them are required to form a hive as a beginning, and under favourable circumstances several boxes are necessary for this purpose. Mr. E. has apparently overlooked the fact that every person does not know the arrangement of a Stewarton apiary, and that bee-keepers may be led astray by concluding that one box and one hive mean the same thing.—R. WILSON, *Stewarton*.

QUERIES AND ANSWERS.

TRELLIS CLIMBERS OUT OF DOORS IN SURREY.

"I have a trellis against a wall of my house that I have been in vain endeavouring to render gay during the summer for some years. I have had an *Eccremocarpus scabra*, which always grows remarkably strong without any blossom worth keeping it for. One autumn I cut it down, and the following summer it grew about twelve feet high, but as it did not produce more than six bunches of flowers I determined to let it stand as it was all the winter, which it did without the slightest protection, and was never without green leaves; but the next summer I had no more flowers than before. I cut it down again last autumn, and it is now springing up again, but I really think I shall move it. What situation would suit it? I could give it a place more fully exposed to the sun; and would it do to climb up and ramble amongst the branches of a tree?

"I have a beautiful *Jasminum nudiflorum* that has been in bloom ever since Christmas day on the same trellis, though last season's flowers are still on it; but being without blossom all the summer I want something that would be very gay beside it.

"I procured a *Solanum jasminoides* last spring, and it grew certainly fifteen feet, but without a single flower. Will you inform me how I must prune it and train it so as to flower well? That, also, has stood this winter without any protection, and is now beginning to grow again. I planted a *Ceanothus azureus* at the same time, but do not think much of it, as, although the flower is beautiful to look into, it is not striking at a distance, and does not produce a succession. Now, considering the *Solanum* has stood the winter without injury, do you not think I might plant a *Fuchsia* against the trellis with advantage? A nicely-trained one of the hardiest and free-blooming sorts would make a lovely object if I could keep it over the winter so as to get it a good size. Do you think I could succeed, and if so, which would you recommend, *Hailstorm*, *Exoniensis*, or *Gigantea*? I think they are amongst the most abundant flowerers. *Banks' Glory* or *Nil Desperandum* are better flowers, but not so free, I think.

"I have a *Passiflora azurea* on a pillar close to the trellis, which reached the top (eight feet) last season, but without flowers. It has held its leaves quite green all the winter. What must I do with it? It has had no protection. My house is on Tulse Hill (Surrey), much exposed, but the plants I have mentioned are situated in a recess, so to speak, formed by the greenhouse projecting on one side, and a portion of the house on the other. The opening is to the south—the trellis faces the west."—FLORA.

[We have seen an *Eccremocarpus* 130 feet long, and the stem as thick as the wrist on outhouses close to the south end of the Malvern Hills, and with hardly a dozen flowers in a season. It flowers but from three to seven years old, and after that it should be renewed from seeds. *Ceanothus azureus* is, without a single exception, the most admired by ladies of all the wall-plants they have in England. *Fuchsia Riccartoni* is the hardiest and the strongest of them, or of that race of them, but hard winters kill it in England. Any others would need thick coverings. *Passion-flowers*, like *Solanum jasminoides* and most other fast climbers, do not flower much for the first three years after planting, and all of them require very close pruning till they show blooms most freely; then they must not be so hard pruned. *Jasminum nudiflorum* we would remove from the trellis now, and take it back in October to bloom. It ought, in fact, to be thus moved every year of its life.]

PEACH TREES IN POTS SHOWING BLOSSOM-BUDS ONLY.

"I have some Peach trees in pots subjected to moderate heat in a small forcing house, falling to 40° or 45° of temperature at night. These trees were pruned in good time, leaving what was supposed to be six or seven wood-buds on a portion of a branch about as many inches long. These have, however, all proved themselves to be blossom-buds without a leaf, and have actually set their fruit, and in some other instances where there were three buds, a wood-bud in the middle and two blossom-buds at the side, they have all become blossom-buds. Fruit, I believe, is the leaf in another shape; but is it not unusual for what appeared to be embryo leaves to come out at once in the shape of blossom? As none of these buds could without any leaf be of use, though they have set fruit they have been taken off, leaving the branches quite naked and bare. As this is rather unsightly, not to mention other inconveniences, I shall be much obliged if you can give me some insight into the cause, that I may endeavour to guard against it in future. I should be glad also to know whether the now naked branches, but not dead, from which the blossoms were taken should be cut off, and when?"

[Your Peach trees are in a state of debility, arising either from bearing too large a quantity of fruit last year, or from too little vigour in the action of the roots. Examine the roots, and see if they have become pot bound. If they have shift them into larger pots, and give them a supply of fresh and richer soil to feed upon, and we have no doubt you will not have a recurrence of the same misfortune next year. Do not cut off the naked branches just yet, but wait for a week or two, and you will find any dormant buds which may be at their base will begin to break, and therefore guide you as to where the naked shoots should be pruned.]

CUCUMBERS IN A LATE VINERY.

"I have a late vinery, and in it a large pit. Some eight weeks since I filled a portion of this pit with tan and well-turned stable manure, hoping to get a few Cucumbers before the Vines should be in full leaf. A two-light frame was put on. The heat rose well and steadily, and, moreover, has continued, arising, I suppose, from the fact that two-thirds of the bed was tan; 80° bottom heat; top heat seldom below 70°. Some Cucumber plants, healthy and strong, were put in, as also Chrysanthemum cuttings, Vine eyes, and young Fuchsias. The bed seemed to be everything that could be desired; but yet the Cucumbers have dwindled away and nearly perished. I was in the habit of looking at them night after night, and of examining the state of the heat by a lantern, and I found that as often as I put the flame near the bed it was extinguished. At first I was inclined to blame the servant for not properly trimming my lamp, but have since discovered that it was owing to some noxious gas proceeding from the bed. There was evidently lack of oxygen; and, as I drew in breath over the frame, I could distinctly perceive that the vapour was very different from that which usually obtains in such cases. Would the tan generate such a gas, and is there any remedy?"—B.

[The idea of a Cucumber bed in a late vinery is a very good one, and has several times been adopted by ourselves with great success. Two great advantages were gained. The first was, that the heat from the fermenting material was the best of all heat for breaking the Vine buds regularly and strongly. The second was, that air could be more copiously and regularly given to the Cucumbers than if they had been growing in a bed out of doors, because the air in the house would always be comparatively warm, and even in very cold weather a little fire could be used before the Vines did break their buds, and after that artificial heat would be used at any rate, we presume, when necessary. Our correspondent anticipated fruit before the Vines came into leaf; but unless they covered the roof thickly Cucumbers might be gathered freely in such a house until they were obtained from handlights out of doors. When the house was kept high enough for Vines blooming and swelling there would be no necessity for the Cucumber frame at all, as the shoots of the Cucumbers would ramble freely over the bed.

Cucumbers, of course, require a certain amount of light to keep their foliage healthy; but, as the fruit is better without seed than with it, it thrives very well in such a subdued light as would be obtained by Vine stems four or five feet apart on the roof above them. We have tried Melons the same way, but with less success, as, though the fruit swelled well enough, it was deficient in flavour. In fact, the less shade a Melon plant has the finer generally will be the flavour of the fruit; while bright, unobstructed sunlight has a tendency at times to make Cucumbers bitter. We should better have been able to speak of the cause of failure if we had known how other things, such as Fuchsias, did in the bed, because if there was nothing wrong with them we should be apt to imagine that the Cucumbers had received some check independently of the state of the bed. Most likely, however, the dung had not been quite sweet enough, and the tan might have been better for giving it a sweating and a turning before using it. How are the condensed drops of water in a morning on the sashbars? If not as pure as a dewdrop it is a sign that the fermenting matter is not sweet enough. Even if that was not so sweet as it ought to have been the injury might have been avoided by leaving the sashes tilted for a quarter or half of an inch at the back. In dull weather from 65° to 70° would be quite high enough during the day, and 65° at night. So air might have been safely left on constantly; and for want of better information we rather think this will be the sheet anchor of future safety and success.]

RESTORING VIGOUR TO ORANGE TREES.

"Will you inform me how I am to recover the health of some old Orange trees? Do what I will I cannot keep them clean, and the branches are constantly dying back. They are now in square tubs, one foot eight inches wide by eighteen inches deep. My employer has granted me some new tubs for them. The trees are from seven to ten feet high, with stems from six to eight inches in diameter. What size ought the new tubs to be, and when should they be retubbed? also, what treatment ought they to have afterwards? The Orange house is a lean-to one, with a flue underneath the floor."—A CORNISH SUBSCRIBER.

[We cannot tell you what sized boxes you would require unless we knew the state of the roots, and the size of the head of the trees, and how much they would require to be pruned in. If the roots are in a bad state the trees might be better retubbed in the same-sized boxes for another year. If in good order the tubs may be from two feet to two feet and a half square. If in fine health from two feet and a half to three feet would not be too much for such fine, large-stemmed trees. They could not be shifted better than any time in April when everything was ready for the purpose. This is how we would set about it. We would procure as much tan as would pack round the tubs when set in the Orange house, and have it sweetened by laying in a heap and several turnings; or we would get as much dung, or dung and leaves, sweetened as nicely as for a Cucumber bed, as would be necessary for such a purpose. We would also secure a sufficient quantity of fresh fibry loam, breaking it chiefly with the hand into small pieces, and, if using a riddle at all, using a fine one to get rid of all the fine matter when gently sifted. This we would make about three-fourths of the compost, and the other fourth would consist of bits of charcoal, heath soil, nodules of old, dried cow-dung, and a sprinkling of silver sand. When the plants were untubbed we would pick out all the old soil possible without injuring the roots much. If the ball was at all dry we would set it in a tub of water for half an hour, and let it drain afterwards for one hour. If the soil in the interior was much wasted we would use this means for washing it out. Drain the tubs well; sprinkle a little moss over the drainage, then a layer of the roughest compost; pack the new soil among the roots, and if previously dipped, and the new soil is moistish, little water will be wanted until growth is proceeding. Then pack the fermenting material among the boxes in the house, which will encourage active root action, and cause the heads of the plants to break freely. Slightly sprinkle the heads frequently from the syringe, and give comparatively little air for some weeks, preferring to shade in hot, sunny days. The above would be the best method, and about

Midsummer your fermenting material might be all removed. If you cannot well adopt this plan, then your next best is to light and keep a fair fire in your flue, so as to raise the temperature to an average of from 60° to 65°, and syringe the trees often, and keep the atmosphere close and moist by pouring water on the floor, &c., until fresh growth is proceeding freely, when in either method the trees must be gradually inured to more light and air.]

FORCED STRAWBERRIES FAILING.

"Being wishful to try a few Strawberries, according to Mr. McEwen's directions, in pots in a vinery, and having procured a hundred plants of *Alice Maud*, the only ones I could get at the time to make good plants of for this season, and having taken every care of them, they have turned out very strong plants, being kept in the vinery all winter. I lit my fire on the 1st of February, but have no appearance of any bloom upon them yet, though sending out strong runners. I am wishful to know whether they will do anything yet, as I am losing hopes of them."—A CONSTANT READER.

[You say nothing of the treatment of the plants before you put them into forcing trim. Last season a learned doctor aroused us old-fashioned practicals from anything like self-esteem by telling how, in the gardens, Strawberries were forced in small pots, without much previous preparation, so as to gather fruit, so far as we recollect, at the wonderfully early period of the end of May. We owe a vast deal of our best scientific gardening to the expanded views of the learned doctor, but now and then he comes out with a startler that is attended with results very different from what the fresh men in gardening have been led to anticipate, and many are the complaints of failures this season as respects Strawberries, though they have done as the doctor recommended, never thinking that, though plants may be taken up in March and April, and forced tolerably well, there will be less chance of success with such plants if put into heat in December and January. The fact is that with all early forcing of Strawberries success will greatly depend, not so much on the size of the pots or the strength of the plants, as on the buds being thoroughly matured and the pots full of roots before the end of autumn. You say nothing of how you stood your plants, and how the roots were in this respect, but very likely we have alluded to the cause of failure. As they will now have been fully seven weeks or more in heat we can hold out no hopes of their doing much good. If you took them out and protected them for a fortnight or so, and then planted them out, you might have a gathering in September, and wonderful crops the year following. We presume that you raised the temperature gradually, say from 45° to 55°. They should hardly be at 60° until they have finished blooming.]

GREENHOUSE PLANTS IN EARLY VINERY.

"Having a vinery that I am obliged to grow flowers in, and my Cinerarias, Calceolarias, and Geraniums being covered with green fly, I want to fumigate them; but I am afraid of hurting the Vines, as they are just setting their fruit. If you would give me a little advice how to act I should be greatly obliged."—A GREENHORN.

[Yours is a case in which insects and failures are a necessary consequence. If your Vine buds were just beginning to swell your Calceolarias and Cinerarias *might* have been in perfect health, because the average night temperature might be about 45°, with a rise from sunshine, and plenty of air during the day. As your Vines are setting from the middle to the end of March, your plants, we presume, have had an average night temperature of 60°, or thereabouts, and no great quantity of air during the day, and these two tribes especially it would be difficult to keep clean and healthy in such circumstances. Geraniums will stand more heat, but will be lanky in consequence. The scarlet group, if they have a fair quantity of light, will seldom quarrel with the amount of heat. If you must use such a vinery as a greenhouse you should use plants that will stand heat after you commence forcing. For instance, you might have had Camellias and Epacris in bloom since the end of October, and these finished blooming and pruned would make their fresh growth in such a house nicely. But

how have you let your plants be so full of green fly? Very likely the best thing you can do is to turn them all adrift. When once so covered smoking them is almost a waste of money and trouble. The fingers, the syringe, and a smoking should have been resorted to when the first insects appeared. You will not hurt the Vines if the fruit is set and the tobacco smoke is cool. It is not likely that any flies are on the Vines so long as they can get Calceolarias and Cinerarias to feed upon. We should, therefore, advise moving all the plants out into a shed, closet, or any close place, and smoking them there, and getting the house thoroughly cleaned in the meantime. If you could contrive any place for them where the plants could have light and shelter afterwards it would suit them better than the house. Let the plants be dry when you smoke them. You may give them two or three doses at twenty-four hours' interval, and then lay them down on a mat or clean cloth. Turn them round and round, and batter them with water from a syringe most unmercifully. If so bad as you say the beauty will be pretty well finished for this year, and the most you can do is to secure a clean stock for future work. If you can depend on clean water you may syringe your Vines early in the morning, and towards shutting-up time in the afternoon, or only at the latter time, using water at about 70°, or a little more, continuing the process until the berries begin to change. For many years we give a good syringing after the fruit is fairly set to clear away all remains of blossom, &c.; but after that we syringe no more, but keep up the necessary moisture in the atmosphere by evaporating pans, and sprinkling the floor of the house.]

AIDING AN OLD TRANSPLANTED HOLLY.

"A large Holly, nine feet high, was removed during some alterations four years ago. The tree at present has very few leaves upon it; but the branches, of which I inclose a specimen, are covered with little buds. It presents a most forlorn appearance, and standing upon a lawn in front of the house is anything but ornamental. It has thrown out a small healthy shoot from the bottom. What ought we to do?

"We are dressing a lawn with fresh earth and ashes according to Mr. Beaton's directions. Will it be advisable to water it with liquid manure? and if so, should it be done *before* or *after* sowing? It is recommended, in a back number, to 'BERKSHIRE KATIE' to soak the earth *before* putting it on. Ours is already on."—ANNIE WENTWORTH.

[The *Holly* is what gardeners call dying by inches. If let alone it will get worse and worse for the next four or five years, then stand still a few years; after that it will slowly mend during the next twenty years, and at the end of that time it will look middling. When a large Holly does not actually die the first year after transplanting, but looks very bad, it will never die *properly* from that cause, neither will it recover sufficiently to pay the transplanting if he was of age at the time of transplanting. How many cases to the contrary can be cited against this sweeping charge?

No liquid manure this season for your lawn. Be sure to have the stones well raked off, and no amount of rolling will be too much to consolidate the surface for a "bed" to the seeds.]

TO CORRESPONDENTS.

MANY QUERIES must remain unanswered until next week.

LIME WATER (*A Subscriber*).—The lime does not require slacking; put it fresh from the kiln into the water. Rain water is best. The lime water is to be used clear for the sake of not whitening the lawn. The quantity of lime is not material; but a pint of lime to two gallons would be enough.

VEGETABLE MARROWS (*A Darlington Novice*).—We have not tried the "American Marrows," but they are good, probably. Your culture is all right. Peg the branches down at short intervals, which will preserve them from damage by winds.

PROPAGATING APPARATUS (*G. H.*).—Write to Mr. West, ironmonger, Surbiton, Kingston-on-Thames, Surrey.

HYACINTHS WITH SEVERAL TRUSSES (*A Window Gardener*).—It is difficult to account for such things. Strong bulbs frequently throw up two or three stems, and if the bud has been injured, instead of throwing up one fine central stem, a few small ones will be sent up, something

in the way of suckers in another plant when the stem is injured. Perhaps the manure was rather strong.

GERANIUMS FOR WINTER BLOOMING (L. J.).—*Baron Hugel* is the best *Geranium* to prepare for winter forcing, and the first cross seedlings from it are the next best; such as *Orion*, *Reidii*, *Dazzle*, and *Frogmore Seedling*, a new delicate rosy pink, a lovely flower in winter. We have had these in bloom all this winter, also *Tom Thumb*, and two or three more, but *Baron Hugel's* breed is certainly the best; but they do not keep the white eye in winter as they do in summer. The grand thing is to prepare scarlet *Geraniums* for flowering in winter, and now that you have opened the subject at the right time we shall return to it soon with such forces as will drive the enemy out of memory. There is no *Oleander* better than the old double.

BEE FLOWERS (Tyro).—It is hopeless for you to keep your bees from the *Rhododendrons*. Why do you wish to do so? *Mignonette* and *Melilotus leucantha* are about the best bee flowers. See an advertisement in our number for March 17th.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

DEWSBURY. Sept. 2. *Sec.*, Harrison Brooke, Esq.

LEAMINGTON. Wednesday, Thursday, and Friday, July the 8th, 9th, and 10th, 1857. *Hon. Sec.*, Thomas Grove.

NOTTINGHAM CENTRAL. (Poultry, Pigeons, and Canaries.) January 19th, 20th, 21st, and 22nd, 1858. *Sec.*, Mr. Etherington, jun., Swinton, near Nottingham.

NOTTINGHAMSHIRE. At Southwell, Wednesday and Thursday, December 16th and 17th. Entries close November 18th. *Hon. Sec.*, Mr. R. Hawksley, jun., Southwell.

N.B.—Secretaries will oblige us by sending early copies of their lists.

NOTES ON POLAND FOWLS.

POLANDS are, I think, the most beautiful of all the different classes of poultry, and, as I shall set forth, one of the best laying varieties, quite equal, in my humble opinion, to either *Cochins* or *Pencilled Hamburgs*—that is to say as *spring* layers; for though the *Polands* may not beat *Cochins* as winter layers, they are splendid spring layers.

Now *Polands*, which are my chief pets next to *Bantams*, are divided into three chief classes—*Black*, *Gold-spangled*, and *Silver-spangled*; and I will describe their points in plumage, and then I will talk about their laying and general qualities.

1. The *Black*.—They should have a neatly-shaped body, with very large fantail in hens, and a long flowing one in cock. Their colour should be black in every part of their plumage, and the topknot should be white, or at least as few coloured feathers as possible in it; and lastly (though I know a great outcry will be raised against me), they should have large wattles, and in the cock a large, crescent-shaped comb. This I say because, although birds are all the rage now that have no combs, yet in breeding them without any comb form is often sacrificed.

2. The *Gold-spangled* should have the ground colour of the plumage a rich, dark gold, and the feathers should be regularly spangled with black. They must have blue legs, and the topknot in this sort must be very large and dark according to my opinion, though lately there has arisen a fashion of crests being sprinkled with white. These birds, also, should have a little comb.

3. The *Silver-spangled* answer to the same description, only the ground colour of their plumage is a pure snowy white.

Now, then, for the *qualities* of *Polands*. In the winter and spring I have found them to lay, especially the *Golden* ones, exceedingly well. My *Golden* pullets laid through the winter, and, as I told you in a letter signed "A POULTRY LOVER," I have a pullet four months and a half old, or rather, by this time five months, that laid five eggs weekly during the winter. Well, then, *Polands* are capital layers and capital foragers too. They do not eat so much as the generality of fowls, and amply pay by their eggs, and I am sorry to say people now do not pay half enough attention to them. They also resemble the much-lauded *Spangled Hamburgs* in never, or very rarely, evincing the slightest desire to sit. There is one drawback to them sometimes, viz., perhaps they will take a fancy to laying away; but with kind and gentle treatment this desire may always be done away with, and when they have once laid in a nest two or three times they will not forsake it. The *Gold-spangled*, perhaps, surpass the others as winter layers, but all three kinds are pretty equal otherwise.

The eggs of *Polands* may always be known by their pale yolk, and though small are of an exquisite flavour. In short, there is no breed of fowls more beautiful than the *Polands*, and only the *Spangled Hamburgs* beat them in laying.

Another point in *Polands* I must mention, which I have always observed, at least in the *White-crested Blacks*, viz., the beautiful conduct of the cock towards the hens; in fact, the *Poland* cock surpasses all others in his *chivalrous* conduct to his dames. He is indefatigable in scratching up food for them, and in inviting them to receive food from his own beak, always ready to protect and assist them, and always warning them if any danger appears near at hand; and lastly, never chasing, robbing, pecking, or driving them.

There is no lovelier breed than the *Polands*, nor any more profitable.—A WILTSHIRE POULTRY-KEEPER.

MRS. DORKING'S RESPONSIVE CACKLE.

MRS. POLAND, cackle as much as you will, and publish your good qualities; but recollect, madam, comparisons are always odious. Who told you that I was a greater eater than yourself? I contend that my eggs are larger than yours, and I will lay against you any day; and what is your place at table? The sideboard, or wherever you will not be seen, or where your black legs may be hidden. I am astonished at the impudence that can say you are as strong as other fowls. Do you know there was once a country where all the inhabitants were hump-backed? During divine service one day a straight man came in, and the minister asked the congregation to pray for the poor deformed man who had just entered. That is what you might do for one of us. You know most of you are deformed, and you also know you are very sickly. You are all farmed out like parish children; you never know your parents. Talk of your plumage! Look in the glass the first wet day we have; see the white topknot you are so proud of, a few stray draggled feathers, and then, spite of your constitution, what a cold you have in the head afterwards! Oh, for shame, telling such horrid, wicked stories about me! Keep to yourself, or you will hear more from—AN INDIGNANT DORKING, THE MOTHER OF A FAMILY.

UNBEARDED POLANDS.

THERE have lately been complaints from the owners of unbearded *Polands* that their claims are set aside to make room for the bearded varieties, and that they are driven from the field by them. "Your own faults," say we. "Why don't you make a better fight for it? You gave up the combat and withdrew." We had no idea till lately beards had so much influence on character as they have. We knew a respectable London tradesman, really what ladies would call a nice man—linen scrupulously white, suit of well-made black, waistcoat poaching a little on the clerical, and a well-tied white neckcloth. This nice man retired, and we had not seen him for some years till we found him a successful *Poland* exhibitor in the north. What a change! A long beard, a semi-moustache shaved only under the nostrils, trousers with a remarkable stripe, and a frock coat buttoned up to the chin: manner decidedly military. Speaking to him about his fowls, and venturing to say we still liked the unbearded, he spoke of them with evident disgust. "Oh!" thought we, "if the beard has made such a difference in you, and caused you to be so fierce, no wonder the poor unbearded *Polands* have withdrawn from their fierce brethren."

But we would put in a plea for the unbearded, and we would tell their owners not to be frightened, nor to retire in dismay from their fierce-looking opponents. Many of them may say—

"Then know that I, one Snug, the joiner am,
No lion fell, nor else no lion's dam."

It is hard upon Judges for exhibitors to retire without a contest, and then to say those Judges would not have awarded them prizes had they shown their birds. It is almost years since a good unbearded pen has been shown, and many would rejoice to see one. The idea that such cannot be successful may be classed among the vulgar poultry errors.

Many good exhibitors oscillate between a third and fourth prize and a high commendation. If they show four pens every one is distinguished, yet they never stand first. Sometimes they say they cannot make it out. Well, we can: this is another error. The four pens are made up, and scanned and criticised, and at last it is agreed very few can show four such pens. Quite right, good exhibitor; perhaps no one can. "The usual luck, Sir—third prize, and every pen highly commended. Cannot understand it. Mr. Z. shows but two pens, and gets first and second." This is another error. If, good exhibitor, you had made up two pens by taking the best of your four you would have won. Every one who shows for a prize should endeavour to win. To do that the very best pen that can be got together should be made up—the three or four best birds, as the entries may be. It is by grasping at too much that you lose all; you make four pens all above mediocrity, instead of one of surpassing merit. The next complaint is, "My birds do not tell so well as my neighbour's." Because you put some of your best birds in each pen, and you cannot, therefore, afford to sell at a moderate price. Mr. Z. takes the Cup with a marvellous pen; on that he puts a prohibitory price. He enters three other pens at sums which, while they are remunerating to him, are within reach of ordinary buyers, consequently they are all sold. That is the difference between you and Mr. Z.

BANTAMS.

I READ with considerable interest the remarks by "A WILTSHIRE POULTRY-KEEPER," in THE COTTAGE GARDENER of the 10th, on the classes of Bantams. I regret that so little has of late been said respecting this very interesting portion of the fancy. Why should not Bantams rank as high as other varieties of *fancy poultry*? *Hamburgh* fanciers report to us the wonderful egg-producing qualities of their favourites; *Dorking*, the advantages theirs possess over others for culinary purposes; *Cochins* as winter layers; *Spanish* as laying the largest eggs; *Game* as good for culinary use, as well as the superior quality of their 'eggs. Neither are the *Polish* forgotten by their many admirers; but more appears to be said with regard to perfection in plumage than any useful quality. *Malays* have a few friends, who cannot say much for their beauty; their other virtues are best known to those who keep them.

I am often amused by seeing how tenaciously the lover of a particular variety sticks to the text that his favourites are the best for this or for that, when, after all, they are kept for no such purpose as represented. If poultry were kept only for the eggs they laid and the fineness of their chickens, the cross breeds worth from two to three shillings would take the place of those pure-bred beauties, worth, perhaps, twice as many pounds. We sometimes find a poultry-keeper—he can scarcely be called a fancier—announcing to the world that a cross between *Spanish* and *Dorking* or *Spanish* and *Cochin* produces the largest and greatest number of eggs. He wonders why there is no prize given to such birds, they being the most useful. Is he an exhibitor? No; but keeps fowls that lay the best, and cares not whether they are black, yellow, or white.

The majority of articles that we read in THE COTTAGE GARDENER are written by exhibitors, and I wish to class all poultry kept for exhibition as *fancy poultry*. Such being the case, why are not Bantams as deserving of cups and prizes as any other variety? They pay the same entrance, take up less room, are less expensive to Committees, and yet they are insulted with a less prize than their giant neighbours. Now, is this right? In common justice to my favourites I say it is not; and unless better encouragement is offered to Bantam breeders how can we expect to find perfection in their various classes? Wherever liberal prizes are offered there we find them muster well, and they are not the least attractive part of an exhibition; on the contrary, we always find the Bantam classes thronged with admirers. I was particularly struck at the last Birmingham Show with the attractive powers of the *Game* varieties, more especially the *Duckwings*. They seemed to elicit universal praise; and what variety is more deserving admiration? The model of an English *Game* cock in miniature, strutting about as bold as a lion, he has confidence sufficient to encounter any

intruder upon his walk. The hens are models of *Game* both in colour and habits; they are tight, hard-feathered, wonderful mothers, very hardy, and lay as well as any other varieties.

At present *Game Bantams* are scarce, and command a high price; but I hope before long to see classes for *Duckwing* and *Black-breasted Reds* at our principal exhibitions—then they will be better represented. I have no wish to rank *Game* higher than others, but should, for one, like to see them placed on an equality with their neighbours.

I was a little surprised at some of the remarks on the *Laced* varieties by the "WILTSHIRE POULTRY-KEEPER." He says, "Some *Laced Bantams* have merely the tip of the feather touched with black." I do not call these *laced*; they are *spangled*. I have often noticed such a variety. The cock is very much like a *Golden-spangled Hamburgh*, with a broad double comb, spotted breast, and a beautiful flowing tail, having no resemblance to the square tail of the *Laced* breeds. The hens are a rich gold colour, each feather spangled with black, and not *laced*.

The points in *Black* and *White* are well described, but I should like to have seen something said about the "ear-lobe" in *Black Bantams*. For my part I do not consider it a point in breed, but certainly think it adds very much to the beauty of a pen. I have seen birds with the red ear that would be difficult to beat, and do not think it right that other points of excellency should be sacrificed for this one. The colour of the legs should be black or slaty. I prefer the wings of both *Black* and *White* to be well up to the body, not drooping.

I have no doubt fanciers will have different opinions, and should be very glad to see, through the medium of your valuable paper, an expression as to the requirements of each variety.—DANDY.

PIGEONS.

(Continued from page 452.)

CLASS 3, VARIETY 5.—HIGH-BRED FANCY SHORT-FACED TUMBLERS.

THE High-bred or Short-faced Tumblers are of all the foregoing varieties of colour, and may be met with of most of the markings belonging to the commoner sorts. Their principal difference consists in their delicate form, diminutive size, and the accuracy with which they approach the standard laid down by the gentlemen of the fancy. This standard relates to five points, namely, the head, the beak, the eye, the carriage or shape, and the feather, or colour and marking. I will endeavour to condense the rules for these five properties.

The *head* should be round, broad, and high, that is to say, having a full forehead, rising abruptly and rather overhanging the beak, so as to form an acute angle where the head and beak join, or, as the fanciers say, have a good stop—a similar fancy to that of the *spaniel* dog fanciers; and, if I am not misinformed, both fanciers resort occasionally to the practice of breaking the beak or nose when young to improve the stop; but this often gives the birds an up-beaked look. The skin over the nostrils, or wattle, as the fanciers call it, must be very fine and narrow, so as to cause but little division between the beak and the feathers of the head, which should have the appearance of rising erect from the base of the tiny beak. Mr. J. M. Eaton says, "And still further to add to the beauty and finish of the head, the feathers under the eye and about the lower jaw should be full and a little curved upwards, which is called 'muffy.'"

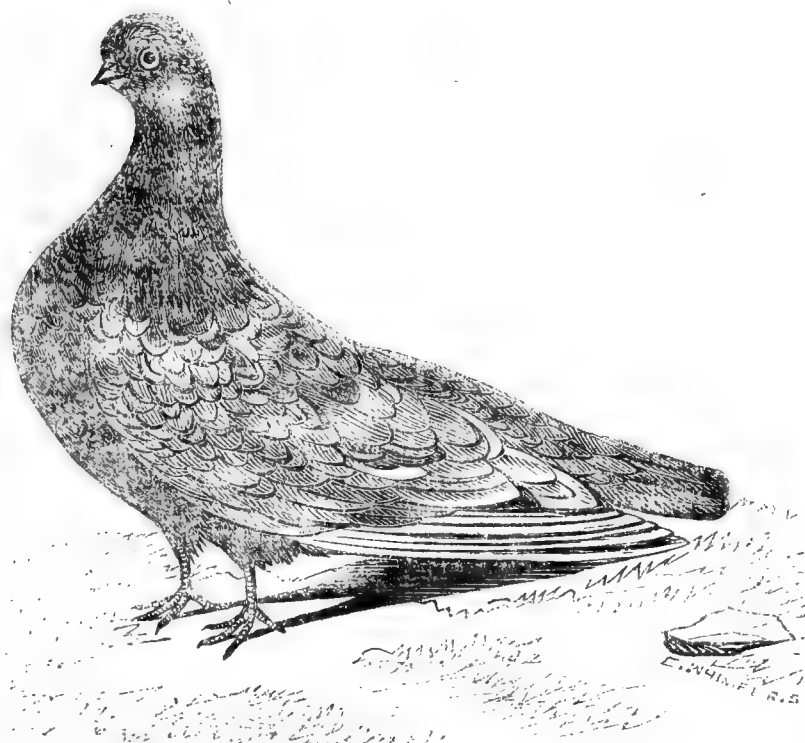
The *beak* of a superior Short-faced Tumbler should not exceed five-eighths of an inch, measured from the iris of the eye to the end of the quick of the beak, but the shorter the better, straight, and fine, and it has been compared to that of a *goldfinch*. Paring or culling the beak is resorted to by some dishonest persons; but it is generally easily to be detected by practised eyes, and spoils the appearance. If the young are reared by too coarse nurses they often have their beaks wrenched or twisted, which makes them unsightly or parrot-beaked.

The *eye* should be of the brightest and clearest pearly

white, the fuller and more prominent the better; and there must be no naked skin or cere round it. In the best-headed birds the eye often appears rather below the centre of the head. A broken or muddy eye spoils the prettiest face.

Shape and Carriage.—The form of the birds should be small, compact, plump, or rounded in shape, short thin neck, full and protuberant chest, short back, tail and pinion feathers also short, and feet small, the carriage upish or dandified, head well thrown back, neck curved, chest up, pinions sweeping below the tail, the bird strutting on its toes as if it was walking tiptoe to make the most of itself. A dull, mopish bird never shows to so much advantage.

Feather is the last property to be mentioned; and, as Short-faced Tumblers are of all shades and markings, so it suffices to say that of two birds equally good in other respects the precedence would be awarded to that of the best colour and most accurately marked.



Of all the varieties of Short-faced Tumblers the *Almond* is the most admired. Its properties are exactly the same as in all the others, differing only in feather, which should be a rich, bright yellow, interspersed with jet black and clear white. The twelve primary feathers of the tail and the ten in each flight must each contain the three colours to constitute the bird a standard Almond. Few of the so-called Almonds can, however, come up to this standard, and very few are of a good yellow ground colour, they generally being of a kite or reddish brown colour, resembling the inside of the shell of the almond nuts, from which it is supposed they derive the name; but the more they are variegated in the three colours, yellow, black, and white, the more they are esteemed. They might not inappropriately be called *Harlequins* from their many-coloured clothing.

The French call the Short-faced Tumblers *Pigeon Culbutant Anglais*, and the variegated ones they designate *Pigeon Culbutant Pantomime*. MM. Boitard and Corbie remark of the Tumbler Pigeons, that in 1817 the English bought up all they could find for sale in France. To those gentlemen who regard the origin of the name Almond, as generally admitted, to be unsatisfactory, may I suggest that it might arise from a corruption of the French for German, *Allemand*, as I believe it is universally admitted that we obtained our handsome coloured Tumblers by crossing with the Dutch or German varieties?

The Germans call the Shorter-faced Tumblers "*Hollanders*."

Our best Short-faced Tumblers are bred so high and tenderly that they are rarely allowed to fly, and the more delicate they are the more they are esteemed. Thus their rearing requires great care and attention, and has become quite artificial, so as to require the young birds to be shifted to fresh nurses, or birds that have hatched more recently, to obtain a longer supply of soft meat, *alias* Pigeon's milk, with which the old birds first feed the young, as also to insure their being longer brooded over. The Short-faced Tumblers do occasionally tumble, and, if kept more naturally,

would doubtlessly oftener do so, though, in general, they do not fly and tumble so well as their coarser brethren.

I fear I have already dwelt too long on these beautiful little pets; and I shall, therefore, conclude by advising those who wish for a fuller description to peruse Mr. J. M. Eaton's "*Treatise on the Almond Tumbler*," which contains much information respecting these birds and their management.

It may not be out of place to correct an error that is widely diffused, namely, that all whole-coloured Tumblers are called "*Kites*." Such is not the case. *Kite* or *Hawked* is a brindled colour or mixture of black and red, which in the young bird has a barred appearance, resembling the plumage of a kite or hawk, whence the name. When the kite-coloured Pigeon throws its nest feathers it becomes almost black, generally with a bluish tail and a reddish colour on the inner webs of the primary wing feathers.—B. P. BRENT.

OUR LETTER BOX.

EGGS FROM SIXTY HENS (*A Subscriber*).—We see nothing wrong in your management, and if you got rid of all the hens older than two years you would have more eggs. If eggs are your only object keep none but one-year-old hens. The Dorking cock at one year old is not too young for breeding. We have known a male bird totally neglect one particular hen in his seraglio.

POLANDS (*A Wiltshire Poultry-keeper*).—We had mislaid your communication on this. We cannot promise speedy insertion to any communications. What is desirable to be inserted must be left to the Editor alone. Our correspondent adds, "The assertion in '*THE CACKLE OF A POLISH HEN*' that Polands do not wander, and merely require one hour's liberty daily (on which *no* fowls but Cochins would thrive), is very erroneous."

YORKSHIRE AGRICULTURAL SOCIETY'S PRIZE LIST.—S. B. H. complains that in this there are none for either Pigeons or Rabbits. Is it usual for *Agricultural Societies* to offer prizes for them?

LARGE EGG.—"I have a Cochin hen which a few days ago laid an egg of extraordinary size—five ounces and a half, or more than the third of a pound in weight. On breaking the shell the ordinary white and yolk appeared, but with them a second egg, of rather less than the ordinary size, but with perfect shell, white, and yolk also. The shells I retain in my possession. I had never heard of such a freak of nature before."—A SUBSCRIBER.

[It is not a very unusual occurrence.—Ed.]

LONDON MARKETS.—APRIL 6TH.

COVENT GARDEN.

Our Market accounts are but meagre, and bare trade being exceedingly dull, and scarcely a feature in business worth noticing. Pines and Strawberries are much reduced in price, the latter in supply much beyond the demand. Our usual consignments from the Continent have come to hand in excellent condition. From the West of England a large quantity of Broccoli is still sent, and with it this week a fair sample of new Potatoes from the Scilly Islands. The Potato trade here is slightly improved, and we find in the northern markets that good samples can only be had at increased rates.

POULTRY.

Good Poultry is very scarce, but dull trade causes it to be rather lower than it would otherwise be at this season of the year. Plover's Eggs are slowly coming in, but it is impossible to make any quotation for the first few days.

Large fowls.. 7s. 0d. to 7s. 6d. each.	Widgeons.. 1s. 6d. to 1s. 9d. each.
Smaller do..... 5s. to 5s. 6d. "	Teal 1s. 0d. to 1s. 3d. "
Chickens..... 4s. to 4s. 6d. "	Pigeons 8d. to 9d. "
Goslings .. 7s. 6d. to 8s. 0d. "	Rabbits.... 1s. 5d. to 1s. 6d. "
Ducklings.. 4s. 0d. to 4s. 6d. "	Wild ditto... 10d. to 1s. 0d. "
Guinea Fowls 3s. 6d. to 4s. 0d. "	Leverets.... 4s. 0d. to 5s. 0d. "
Wild Ducks 2s. 3d. to 2s. 6d. "	

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—April 7, 1857.

WEEKLY CALENDAR.

D M	D W	APRIL 14—20, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun. Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
14	TU	EASTER TUESDAY.	29.804—29.757	58—42	N.E.	16	8 a. 5	52 a. 6	0 7	20	0 14	104
15	W	Box (<i>Buxus sempervirens</i>).	30.058—29.859	58—37	..	—	6	54	1 10	21	0 a. 1	105
16	TH	Least Stitchwort (<i>Sagina</i>).	30.110—30.180	54—31	..	—	4	56	2 1	22	0 16	106
17	F	Gromwell (<i>Lithospermum</i>).	30.139—30.113	55—39	..	—	2	57	2 38	23	0 30	107
18	S	Catchweed (<i>Asperugo</i>).	30.103—30.058	60—31	..	02	0	59	3 6	24	0 44	108
19	SUN	1ST OR LOW SUNDAY.	30.238—30.123	49—25	..	—	IV	VII	3 26	25	0 58	109
20	M	Oxlip (<i>Primula elatior</i>).	30.269—30.209	57—23	..	—	56	2	3 42	26	1 11	110

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 57.8°, and 36.5°, respectively. The greatest heat, 77°, occurred on the 19th, in 1854; and the lowest cold, 20°, on the 16th, in 1847. During the period 109 days were fine, and on 87 rain fell.

If we were asked what is the knowledge best calculated to render profit as well as pleasure to a country resident not actually a farmer? we should reply, a correct knowledge of gardening. If we were asked what is the next knowledge having a similar tendency? we should reply, a correct knowledge of poultry-keeping; and if we were further asked to name the third description of knowledge we considered so tending to profit and pleasure, we should reply, A CORRECT KNOWLEDGE OF BEE-KEEPING.

It has been our good fortune to aid much in the diffusion of sound gardening and poultry knowledge. We have also done something in promoting an acquaintance with bee-keeping, but we are anxious to do more. We all know Virgil relates how his Corycian peasant so managed that

“ Earliest his bees new swarms unnumber'd gave,
And press'd from richest combs the golden wave.”

We wish to induce and aid our countrymen in doing likewise.

One who formerly enriched our pages with his bee experience writes thus upon this subject:—

“ I wish to induce all residents in the country, who have leisure and opportunity, to encourage bee-keeping among their poorer neighbours; and not with a view to their *pecuniary* advantage *only*, for the study of bees is capable of ministering to a much higher end. There is scarcely a more interesting branch of natural history to be mentioned, and none certainly more instructive. To quote the words of Dr. Bevan: ‘ In common with the other branches of natural history it leads to a salutary exercise of the mental faculties; it induces a habit of observation and reflection; no pleasure is more easily attainable, nor less alloyed by any debasing mixture; it tends to enlarge and harmonise the mind, and to elevate it to worthy conceptions of nature and its Author.’ Every word of this is true. The rustic bee-keeper, if he have only a soul to appreciate the works of God, and an intelligence of an inquisitive order—and intelligence is sure to expand with the attentive study of any branch of natural history—cannot fail to become deeply interested in observing the wonderful instincts (instincts akin to reason) of these admirable creatures; at the same time that he will learn many lessons of practical wisdom from their example. Having acquired a knowledge of their habits, not a bee will buzz in his ear without recalling to him some of these lessons, and helping to make him a wiser and a better man. It is certain that in all my experience I never yet met with a keeper of bees who was not a respectable, well-conducted member of society, and a moral, if not a religious, man. It is evident, on reflection, that this pursuit, if well attended to, must occupy some considerable share of a man's time and thoughts. He must be often about his bees, which will help to counteract the baneful allurements of the village ‘ public,’ with all its accompanying syren-like evils. *Whoever is fond of his bees is fond of his home*: this is an axiom of irrefragable truth; and it is an axiom that will be sure to kindle in every true Englishman's breast a favourable

regard for a pursuit, which, though humble, has undoubted power to produce so happy an influence.

“ It is because I believe our rural clergy have it in their power more than anybody else to encourage this branch of rural economy that I have dedicated these pages especially to them. Owing to their continual residence within their parishes or cures, they have the best opportunities, both of acquiring themselves a thorough knowledge of the practical management of bees, and, at the same time, of recommending it to the notice of their people by precept and example. Nor is it alone in respect of the more extended good which they may do to *others* that I would call their attention to this subject, but also on account of the peculiar interest and pleasure which they *themselves* may derive from it. Independently of the interest which attaches to the apian art from economic considerations, and the pleasure of appropriating to one's own use the surplus produce of bee industry—a pleasure, by the way, of a very exquisite kind, as every bee-master will bear me witness—it merits, *as a branch of natural history*, the attention of every lover of nature, and the curious investigator of her secret things. There is still so much mystery attached to the habits of the bee, and especially to the internal economy of the hive, that the scientific study of these insects affords ample scope for much patient and hopeful research. Supposing, however, that the whole history of the hive-bee had been opened up so as to preclude the hope of further discovery, there is quite enough in the simple verification of the discoveries of others to interest and astonish the lover of nature. In every way, indeed, the study of bees is so fascinating and instructive, that I would gladly induce many of my brethren in the ministry to share its pleasures with me.

“ Having said thus much on the subject of bee-keeping generally, by way of recommending an increased attention to it, let me say a few words as to its *difficulties*. These certainly are neither few nor trifling, although perfectly easy of mastery by the patient, intelligent, and persevering bee-owner. The less he can lay claim to this complex character the greater of course will his difficulties become. But are not these qualifications considered necessary to success in every branch of rural economy—I may say, in every pursuit in life? Did one ever hear of stupidity, sloth, or inattention succeeding in any enterprise of whatever kind? The farmer who is content with an occasional stroll over his fields, and a similar inspection of his yards and granaries, will in vain expect to thrive. Can we wonder at the ill success of an ignorant or negligent bee-keeper? And yet how often is the expression of surprise heard from the lips of some individual who has started an apiary, that his bees have disappointed him; when, if particular inquiries were instituted into the cause of the disaster, ten to one it would be found that the hives had been left unnoticed from October to May, and from May to October! The management of bees, which always requires some delicacy, and not a little dexterity of treatment, assuredly demands no less attention and care than other matters of a similar nature. A considerable apprenticeship is necessary in order to obtain the mastery over it as a science. There is no ‘ royal road’ to successful bee-keeping, as there is none in anything else. In his preface to his very useful book, Mr. Taylor has well styled the tyro apian's path, ‘ usually a rough and uncertain one;’ so rough, indeed, and uncertain (chiefly owing to a lack of care and pains), that three out of every five persons, who take up this study even warmly, will be found to relinquish

it with disgust at the end of a few years. Not to dwell here on faults of management, there are other causes of failure, almost peculiar to this country, a few of which I may briefly enumerate. While in America or Australia* it is almost incredible of how large an apiary one hive may become the parent in a very few years; in England a similar hive may stand year after year without change, apparently strong, yet unproductive in either swarms or honey, perhaps in both together. A stock, at the time of purchase, may have had a three or four-year-old queen (an evil which is seldom acknowledged, and still more seldom guarded against), who dies some time in our long winter before there is brood wherewith to replace her; the winter may be mild, and the spring cold and late, and no honey gathered till the end of May, whence proceeds the death from starvation of many a colony of bees (which might be saved by a judicious and timely supply of food), or its productiveness for the current season destroyed. A rainy summer, too, may follow, or a very dry one, neither of which yields much honey; in short, a thousand are the casualties to be feared in this fitful climate, with which the more fortunate bee-keeper of other countries is happily unacquainted. Say, then, whether it is reasonable to expect success in the face of these difficulties, where a considerable skill and much persevering watchfulness are not present to meet and counteract them? To be successful in bee-keeping there must be a sufficient experience in bee-management, whether derived from a practical acquaintance with the subject, or from a diligent study of the best manuals of instruction in the matter; it is requisite to be thoroughly initiated in the mysteries of judicious feeding, and to understand somewhat of that improved system of bee-culture, by whose means the great honey harvests are secured at those rare but favoured seasons when they occur, and the most is made of indifferent years; while at the same time the acquisitive propensity is kept duly in check, so that if *much* is taken as legitimate spoil, *enough* shall still be left to support the prosperity of the hive. Difficult, however, as unquestionably is the science of bee-keeping, it is not beyond the reach of attentive perseverance; and the very difficulties, as in most cases, only serve to enhance the pleasure and gratification of the patient bee-master. It has been judiciously observed, that 'no one who pays a fair amount of attention to the management of those very interesting insects will willingly relinquish the keeping of them.' Carelessness and indifference alone find the difficulties to which I have alluded insurmountable, and I take leave to say *they deserve to do so.*"

Now, facilitating the acquirement of the advantages and overcoming the difficulties thus enumerated, we have long thought could best be promoted by an association of bee-keepers, and we beg to propose its foundation under the title of

THE BRITISH APIARIAN SOCIETY.

It should have for its objects the obtaining and diffusion of correct information relative to the habits and general natural history of bees, as well as the institution of comparative experiments to determine the relative merits of hives; and, indeed, to collect sound knowledge concerning their management generally. It would be quite possible to have the results of these experiments exhibited annually; and our opinion is not confined to this side of the Tweed, for a correspondent in Ayrshire writes thus:—

"An old friend of mine, a bee-keeper for upwards of thirty years, wonders if a society could be formed to consist of English and Scotch apiarians, who would subscribe a small sum each, and agree to send or take to some central place in England, by way of show, on a

* "In a late work on New South Wales I read the following astonishing account of the produce of a single stock of bees:—"In the district Illawarra, near Sydney, one hive has been known to multiply itself to 300 (!!) in the course of *three years*!"

day subsequent to the honey season, a portion of their finest produce, whether in glass, wood, or straw.

"My friend considers such a show would do much to enlighten all parties as to the best methods and hives; in fact, it would do as much good in the bee department as exhibitions have done in poultry concerns."

We will co-operate heartily in this design, and if parties willing to join such a society will oblige us by sending their names, we will, if sufficiently encouraged, take care that immediate steps shall be taken for its formation.

MEETING OF THE HORTICULTURAL SOCIETY.

APRIL 7TH.

A SULTRY April shower about the time of "taking the chair" (three o'clock in the afternoon), and the crowding of the Fellows and their friends, rendered the rooms insufferably hot and inconvenient, so that some of the ladies were obliged to make their escape before the lecture had hardly commenced. But this was only the beginning of troubles; the Chairman for the day, J. J. Blandy, Esq., said that we were so overwhelmed in the business of proposing, seconding, sounding, vouching, and certifying the merits of applicants for the honour of F.H.S., and in balloting so many new candidates at each Meeting, that, like the gallant Colonel Challoner, he, the Chairman, wished very much to ballot the whole in one lump, to give more time for the ladies to see the flowers. But no; there was another "lump" present—a lump of the unleavened dough of which the ancient Council was baked. Dr. Henderson, F.H.S., is a ballot man of the first degree, and, like "them there people," was wonderfully hard in the head. Ladies might faint by the dozen, or "in the lump," but he would have no lumping of balloting; and the consequence was that the ballot-box had to go round four-and-twenty times that day. But they "did him as clean as a whistle" was soon whispered round the room; it was diamond cut diamond to a hair's breadth, two doctors against one doctor;† and a capital "chair" went on hustings-fashion with the other business of the Meeting and with the lecture while the balloting was going on; and if black legs or blue stockings wished to slip into the honours of the Horticultural they might thank Dr. Henderson for having unwittingly oiled the joints. Part of the lecture was about three young American ladies, and one of them was very handsome, and the excitement and attention to tell of and hear all about them were so intense that no one heard, or could hear, the name of any one of the new candidates for election, and all of them might be objectionable for anything we knew. But there was such a stir among the gardeners: twenty-four new Fellows were thus balloted, making 114 since the turn of the wheel, and several new applicants put up their claims for admission at the next Meeting; but when the privileges of Fellows are better understood in the provinces I should not wonder in the least to hear of one thousand new members being added to the list in one year. I hope they will not come so thick, however, till we get rid of the "old house at home," and get a room, or rather, some open place in London to put up a crystal house, one capable of containing thousands; then, with a perfect command over the ventilation, the most delicate health will not be affected for an hour or two.

The show of fruit and flowers was good for the season; the room was not half large enough for a comfortable sight. The garden of the Society "came out" more

† Dr. Royle, Vice-President, sits on the right of the chair, and Dr. Lindley, Vice-Secretary, sits on the left, and gives the lecture.

than formerly, and it was a common saying among the practicals that Mr. McEwen has a considerable number of extra men preparing the garden at Chiswick for the grand Exhibition next June, which is to last two days; also that stalls are being taken already on a vast scale by the inventors and manufacturers of all kinds of garden requisites, amongst whom the hot-water engineers are said to hold the first rank at present.

The entrance passage to the meeting-room was lined on both sides by the most beautifully-grown and the best kinds of *Cinerarias* which good taste, excellent judgment, and a liberal purse could collect together into one nursery, that of Mr. Turner, of Slough. One called *Regalia* (Turner's) is the highest tint of purplish crimson, a conservatory plant, a lady's plant, but not a thorough florist's flower, as it turns back the petals—the very quality to render it of the superlative degree for a bed in the flower garden. *Ruby* is the next tint, and a flat flower; *Optimum* the gayest—a crimson purple edge, and a white ring in the centre; *Baroness de Rothschild* was the best florists' flower, and perhaps the best that was ever seen; it is in the way of *Mrs. Hoyle*, but very superior to it in the qualities. *Delight*, *Prince Albert*, *Lord Palmerston*, *Prince of Wales*, and *John Edwards* were the most striking of the rest, and *Sir Charles Napier* is the best true blue out.

On entering the room the Messrs. Lee had a collection of specimen plants, three kinds of *Eriostemons*, *Boronia tetrandra*, a good red *Camellia*, called *Duc de Bretagne*, and a most noble specimen of *Hedera tulipifera* (not *Hederoma*), which was five feet high, by four or five feet across the widest part, which was about the middle height of a pyramidal plant. Half the gardeners spell this name wrong, and the other half mistake its meaning. Its name is not from *hedera* and *aroma*, but from *hedys*, anything sweet, as the author, Dr. Lindley, himself explained when he first published the genus. "From the exquisite sweetness of the foliage I propose to call them *Hedera*. The leaves, or rather, the half-ripe fruit of those plants preserve their fragrance so well that they might be worth collecting for the use of the perfumers, and if so they would furnish a new and most agreeable article of luxury to Europe, and a small aid to the natural resources of the colony."*

Mr. Alnut exhibited a small plant of the true *Marchioness of Exeter* *Camellia*, but to see it in perfection the plant should be planted out in a conservatory; it is of the same colour as *elegans*, fully as large, and quite double. With it were *liniata superba* and *Comte de Paris*, two light kinds; also three kinds of *Azaleas*.

Mr. Henderson, of Pine Apple Place, sent a collection of specimen plants, consisting of *Eriostemons*, *Boronias*, *Aphelaxis*, *Epacris miniata splendens* particularly well grown, *Acacia Drummondii*, and *Arum dracunculius*.

Mr. Cutbush, of Barnet, followed with another similar collection, in which was the delicate rosy *Boronia Drummondii* and a splendid specimen of *Epacris rubra grandiflora*.

Mr. Veitch sent a collection of twelve kinds of Orchids in bloom, of which particular mention was made in the lecture of *Dendrobium Cambridgeanum*, a fine yellow flower with a dark eye, and *Dendrobium Farmerii*. A six-flowered *Cypripedium villosum* and a six-spiked *Dendrobium aggregatum* were also very good; and behind them he placed, for effect, a fine specimen of *Acacia Drummondii*.

The Messrs. Jackson, of Kingston, also sent a collection of Orchids, among which were a large specimen of *Lælia superbiens* nearly out of bloom, but it was in fine style all the winter; *Dendrobium nobile*; *Vanda insignis*, a strong plant with two spikes; a fine variety of *Lycaste Skinneri*; a *Cattleya marginata*, and others,

showing a good example to young gardeners how to make the best of the very long flower-stems of some kinds of Orchids. First place the flower-stalks farthest from the eye, then *arch them over to the front* till the flowers come down to the level of the eye; this is far better than twisting them about in training.

Mr. Parker, nurseryman, Hornsey, sent some novel Orchids, the rarest of which were a new *Cypripedium* after the manner of *Lowi*, but with "a shaggy beard and moustache," as the lecturer remarked, and *Dendrobium letuiflorum*, a natural sport from the *nobile* section. Next to these stood a lovely little *Griffinia*, called *Liboniana*, after some Frenchman, from Mr. Veitch; it had a six-flowered scape, which is hardly as many inches high; the upper half of the flowers is of a rich violet blue, the bottom is white. Six plants of *Camellia Storyi*, after *imbricata*, were also from Mr. Veitch; and two kinds of small white *Epacris*, as if seedlings between *elegans* and *ceræflora*. Next to them were three seedling *Azaleas* from Mr. Cutbush, of Barnet, and *Cassia floribunda*; and then the best grown Orchid that ever was seen in that room, a *Dendrobium densiflorum*, from the Bishop of Winchester, with nearly thirty flower-spikes.

Messrs. Henderson, of the Wellington Road Nursery, sent a most rare Brazilian plant, one of Mr. Linden's introduction, called *Rudgea leucocephala*. It has very large, leathery leaves and a dense corymb, or head, of orange-like blossom; it is one of the *Erva de rata*, or rat poisons of the country, and will vie with our largest stove plants.

A noble nosegay, or bunch of cut flowers, from Mr. Snow, gardener to Earl de Grey, was held up by the lecturer as a magnificent example of our very oldest plants—the *Canna iridiflora* and *Rosa ochroleuca*, the first of all the race of Tea-scented Roses, which was introduced by the Society through Mr. Parks when I was at school, and now there is not a single Rose of the kind in Europe which would beat it in competition. The plant is in a No. 6 pot, and there were forty-three such blooms on it that morning! The same plant was from pot to pot for the last five-and-twenty years, and perhaps longer; so you see it must be on its own roots.

But what took the Meeting by surprise and elevated the lecturer to enthusiasm was a new yellow Tea-scented Rose from Carolina—a real yellow at last. It was introduced by Mr. Low, of Clapton, who sent it down into the country to have it well bloomed, but on coming up to the show there was an accident which injured some of the flowers, as was stated in a letter from Mr. Low, but after such a drawback the lecturer declared he "could compare it to nothing so much as to the old yellow Rose, which few can bloom, with the wood and foliage of the Tea Roses." It is a strong, free grower, and is named *Isabella Gray*; and the bachelors amongst us were put on their guard "about two other American ladies" of the name of Gray, but whether it was that they would not bloom, or "were of a certain age," I could not make out from the twitter. The doctor was evidently "taken" by Miss Isabella Gray, and, to tell the truth, I had half a mind to propose "going out" with him that very night. There were many cut flowers of *Camellias*, *Rhododendrons*, and *Roses*. Mr. Blandy had a box full of *Roses*, and Mr. Paul, of Cheshunt, sent a large collection of cut *Roses*, and the best of them all for colour was *Général Jacqueminot*. If the gallant general was as simple as a Scotch Rose in all his habits I should prefer him before *Baronne Prevost* for his colour, were it not for her name and title. The *Géant* was the next highest Rose among them; then Hybrid Perpetual *Madame Tremion*, a glossy crimson; after that *Jules Margottin* and *Prince Leon*, both Hybrid Perpetuals. *Mrs. Siddons*, a yellow Noisette, was also very good, and there was another yellow, marked B., which was still better.

The Messrs. Henderson, of Pine Apple Place, sent their

* Lindley, in "A Sketch of the Vegetation of the Swan River Colony," 39.

usual yearly contribution of *Hyacinths*, thirty kinds in number this time; also ten kinds of *early Tulips*: two kinds were in quite a new style of Tulip—*Proserpine*, fine rose self, and *Vermilion Brilliant*, true, which I booked for the Experimental. The newest *Hyacinths* were *Eclipse*, the best and deepest crimson yet; *Concordia*, next best crimson; *Unique*, a lilac novelty in *Hyacinths*; and *Othello*, the best dark blue.

FRUIT.—There were but two dishes of *Grapes*, three new *Black Hamburgh* bunches from Mr. Forbes, gardener to the Duke of Bedford, and a dish of unripe *Sweetwater* from another exhibitor. There were three fine dishes of *Keen's Seedling Strawberries* by three different growers, Mr. Tillyard, Mr. Ingram, gardener to Mr. Blandy, and Mr. Clark, gardener to the Earl of Daventry, Cobham Hall. Three *Providence Pines* and one *Queen Pine*, from Mr. Clements, of Oakhill, Barnet; a prickly *Cayenne* from the Earl of Hopeton; and another *Cayenne* from Mr. Lousada, Peak House, Sidmouth. Mr. Ferguson, of Stowe, exhibited a fruiting branch of the *Royal George Peach* from a tree fifty years old; also green fruit and healthy maiden trees, propagated from the old one to show the folly of supposing that trees wear out, for nothing could be more healthy than those maiden trees. He also exhibited drawings of geometric flower gardens, with the beds coloured on the best principle of planting them—a new thing which is much wanted. There was a collection of forced vegetables from Mr. Blandy, and another from Mr. Solomon, of Covent Garden, and two glazed plates of singularly beautiful *anatomised leaves*, prepared and painted on by Lady Dorothy Nevil, Dangstein, Petersfield, Hampshire. This is another new process, by which the web between the veins is not destroyed, but looks as if the leaves were first divested of the outer skin or covering, and the rest bleached white like a piece of bladder, with the mid-ribs and all the veins as distinct as if the web was destroyed. On these bleached leaves her ladyship painted various beautiful designs and writings, which were much admired. Mr. Cockburn, gardener to the Earl of Mansfield, sent preserved *Cranberries* in bottle, and in a dry state, the latter kept on a dry shelf without any preparation; and Mr. Fortune sent cones of the new *Abies Kämpferi* preserved in spirits, with a note to say that this beautiful hardy tree will give a new character to the English landscape.

D. BEATON.

WINDOW GARDENING FOR SPRING.

(Continued from page 440, Vol. XVII.)

Over-watering.—Though plants in windows, from being in small pots, are less likely to suffer from over-watering than those in larger pots in greenhouses, and more especially as the air in living rooms is generally drier than in greenhouses, and though, besides, there is less danger of this over-watering in the spring and summer than in the winter months, still, as the pleasure of attending to plants at all will greatly consist in doing so intelligently, I trust our readers will see that each plant must be watered just according as its circumstances require, if that watering should be once a month in winter and twice a day in summer, the frequency depending greatly on the double excitements of heat and sunshine, and the condition of the plant at the time. Just let us take an example or two at random, as these are frequently better remembered than precept, and many more will appear in the treatment of different plants. Here is a *Mesembryanthemum*; water it regularly, and you will kill it with juices which it cannot get rid of. Here is a *Cyclamen* finished blooming nicely, and its leaves are just beginning to get yellowish; water to try and keep them green, and where will your flowers be next season? Take a bulb which requires a season to ripen, and another season to rest or to sleep; keep it always watered, and if you do not kill it you will look in vain for bloom next year. There is a *Fuchsia*. It has no moisture save what it gets from the floor of a

damp, cold cellar during the winter. Its buds are breaking nicely since it has been pruned and set in the window. Water it every time that you refresh its neighbours—a strong-growing *Geranium* and a large-leaved *Cineraria*, and you will make it gouty and sickly to a certainty. Visit the *Cineraria* as seldom as you do the budding *Fuchsia*, and the wilted leaves will dangle in festoons by the sides of the pot. The demand for water will just be in proportion to the moisture thrown off by the stem and foliage. Of course I am excepting marsh plants and aquatics.

2. *How to Water.*—It will have been seen that when this is done at all, in the case of growing plants, it should be done so thoroughly as to moisten every rootlet, and then let the plant alone until a similar repetition is necessary. A drop now and a dribble then is ruinous, mistaken kindness to the plant, and leaves you in ignorance of the state of the bulk of the soil. The same rule, to a great extent, applies to waterings out of doors; and hence mere surface sprinkling, unless for the purpose of refreshing the foliage, is often more injurious than no waterings at all. The arresting of evaporation and the radiation of heat by surface pulverisation would often be better for the crop than surface waterings. Such waterings applied to a plant in a pot, or to plants in a garden, stimulate surface roots at one time, to render them liable to be scorched at another, while the mass of roots below is rendered torpid and inactive.

Modes of Watering.—In watering, the surface soil is best kept smooth by using a flat, small rose, and the water falling in small drops takes down with it a good portion of air. When using a rose, however, it is well to avoid drenching too much the stem or collar of the plant, or in some cases you may expect gangrene and decay there. If you pour the water from the spout of a pot have an oyster shell or a piece of a broken pot, with its concave side uppermost, placed on the surface of the soil, so that the water poured on it will pass gently all over the surface, and not beat strongly against the collar of the plant in the centre. Before June it is as well to water before three or four o'clock, unless the nights and evenings are warm, when it would be better to do it later. Watering overhead should be done with a fine rose or syringe, and, unless for merely lessening evaporation, should be done when the sun has lost part of its power, and yet enough of power remaining to dry the leaves before night. In summer it matters not how late such waterings may be done, as, whether at the roots or over the foliage, there will be a longer time before the sun comes to demand the moisture back again. In winter there should seldom be water left in the saucers unless the plants are growing freely. In the spring months from one-eighth to a quarter of an inch of water will do no harm at times if there is a good depth of drainage in the pots. In some cases it is best to water by means of the saucer, such as when plants are very apt to damp off at the collar, or that part at the surface of the soil where the roots and the stem commence.

Watering Plants that are Resting.—In the case of plants in a state of comparative rest, which must neither be much watered nor yet allowed to become very dry, there is also a little care required. If watered thoroughly in the usual way it should be done early on a sunny day, that the moisture may be drained away and the soil somewhat dried before the plants are removed to their quarters. In particular cases, instead of such a soaking, I prefer making small holes with a wire, and watering so as to do little more than fill the holes, the moisture from which will so permeate that after a short time the earth will be just what is wanted, neither wet nor dry. The best plan of all, however, is to have the pots in a shady place, and plunge them overhead in dampish soil, moss, sawdust, &c., and from such mediums the pots will absorb sufficient moisture, without any necessity for watering until the plants are again stimulated into active growth. Take the *Fuchsia* as an example in the winter and early spring months.

3. *What Water to use.*—*Making hard Water soft.*—None is so good for general purposes as clear rain water, used at a temperature equal to or rather above the temperature of the room, say 55° at the lowest average. After Midsummer until October it will seldom be necessary to heat the water artificially. Many a plant in windows is either destroyed or rendered a fit subject for the attacks of insects by watering

it with cold water. Rain water is not only best, but it is improved when it stands in a tub or cistern open to the sun and air. What is likely to please the washerwoman is also likely to please the plants. Rain water kept in large tanks below ground is frequently rendered as cold and also as hard as spring water, as it absorbs magnesia or lime, &c., from the materials of which the wells are composed. Hard waters are to be avoided, partly because they are so cold when brought from great depths, and because containing sulphate of magnesia or sulphate of lime, the presence of which is easily known by soap becoming curdled in such waters from the lime uniting with the tallow, while the alkali and the sulphuric acid unite together. Such hard water is as unwellcome to cooks and washerwomen as to gardeners. It is much improved, when it is necessary to use it, by exposure to the sun beforehand, and by adding to it some hours previously a little of the carbonate of soda or the carbonate of potash. By such means the carbonate of lime or chalk is precipitated, and the water is rendered soft and pleasant. Those who love their plants, and must take hard water from a well, will never grudge this little attention.

MANURE WATERINGS.—As plants in windows must in general be small the waterings must chiefly consist of pure water. Stronger liquids, containing some manurial matter in solution, if given, should be imparted after the flower-buds are swelling. This will give size and strength to the flowers, without greatly increasing the size of the foliage. Such solutions should be weak and clear. One ounce of guano, or two of superphosphate of lime, will be enough for four gallons. If home-made manures or drainings from the dunghill are used, let them be well diluted. A top dressing of the pot with horse, cow, sheep, or deer-dung, from one to two years old, will be equally useful in imparting extra strength when desirable. R. FISH.

(To be continued.)

THE CARNATION AND PICOTEE.

SUPPOSING the amateur to be a new beginner he should immediately give his orders to the grower, and desire the plants to be sent off carefully packed as soon as possible. He should desire the plants to be healthy, and a good dark green colour in the leaf, and well rooted, without the least taint of mildew. Having sent off his order he should look out for the soil to pot them in as soon as they arrive. I hope he has had the foresight to have the different materials to form the compost by him for twelve months; if so, he may go to work with perfect confidence; but if circumstances have prevented this desirable precaution, then he must try to get a few barrow-loads from a neighbour, and take care for the future. Many theoretical writers assert that the (as they call it) heterogeneous mixture called compost is all fudge; but let such carpet gardeners try to grow these delicate florists' flowers in what they please to denominate good garden mould, and I am pretty certain they will obtain no flowers worthy to contend for the lowest prizes. If any soil would do florists for ages have been great fools to spend so much care and time in obtaining, what long experience has taught them, the proper composts for the various kinds of flowers they produce in such high perfection.

The best materials to form a good *compost* for the Carnation and its closely-allied compeer, the Picotee—for the same *compost* answers well for both—consists in three parts loam obtained from a dry, upland pasture, the turf cut not more than four inches thick and laid up for twelve months, turned over six or seven times during that period, and at every turning a strict look-out kept for the grand enemy of the Carnation, the wire-worm. Every one when found should be effectually killed. The most certain method is to have a pot without a hole at the bottom to put them in, and when the heap is all turned over to pour boiling water over them. Add one part of well-decomposed cowdung, or, if that cannot be had, hotbed dung equally well rotted will do. Also, one

part of decayed leaf mould a year old; a small quantity of river sand will also be useful. It will be of advantage to mix these three materials together two or three months before the potting time, though this is not indispensable. If they are all in good condition and tolerably dry (which they must be), they may be mixed at the time they are wanted. Place as much of the *compost* as may be judged needful under a dry shed, to become moderately dry.

The *compost* being ready, prepare the *pots*. They should be ten or eleven inches in diameter. These plants are generally sold in pairs, and have been kept through the winter in five-inch pots. If new pots are used they should either be exposed to the rain or be soaked a few hours in water. If old ones are used they must be washed and scrubbed quite clean, and allowed to become dry. Procure, also, a quantity of drainage. A large oyster shell laid over the hole at the bottom of the pot, and upon that two inches of broken potsherds, will form a good drain for the superfluous water. To prevent it choking up, lay upon it an inch of the most turfy part of the *compost*. It is not advisable to sift the *compost*, because, if made too fine, it is apt to run together, and prevent the free running of the roots. All this being done, and the plants at hand, turn one pair out of the pot; pick out the old drainage, and, having placed sufficient *compost* in the pot to bring the ball within half an inch of the rim, place the ball in the pot, and work in around it the *compost* so as just to cover the old soil. Then shake it gently down by giving the pot two or three smart blows on the potting bench; then level the *compost* with the hand, and that is finished. So proceed with the rest till all are potted. When that is done place them in their blooming quarters. The surface should be formed or covered with a good thickness of sharp coal ashes, to prevent the worms from ascending into the pots. If the weather should be dry give a sufficient quantity of water to thoroughly wet the entire mass of soil, and no more; for at this season of the year showers of rain are pretty frequent.

Some do not place the *sticks* to their Carnations until they begin to spindle; but I would recommend them to be thrust into the pots immediately; they are then less liable to injure the roots. As soon as the flower-stems begin to rise commence tying, but tie very loosely, or, as the shoots ascend, the leaves will catch the string, and cause the stem to become knee-jointed, which, if not relieved, will certainly break at that joint; therefore constant attention should be given to the ties to prevent so serious a misfortune. The insects likely to prey upon these plants during this period (spring) are the garden slug, the wire-worm, and the green fly. Prevention is better than cure for the first, and that prevention is rendered complete if the pots are isolated in the midst of a rim of water. This is accomplished by having a vessel made either of lead, zinc, or earthenware, with a rim in the centre, that centre being wide enough to allow the pot to go through to the ashes on which it is placed. Any intelligent artificer or potter could easily make such a vessel. They are used also to surround young Dahlia plants. All that is required is attention to keep the hollow of the two circumferences filled with water.

The wire-worm is a more difficult fellow to contend with. I have already directed them to be diligently sought for in the *compost* before using it; but some in the young state may escape the most prying eye. Should their ravages be discovered, then procure some slices of turnips or carrots, and sink them in the soil as near to the plants as possible without injuring the roots. Examine the slices frequently, pick out the worm, and effectually destroy it.

The green fly may be destroyed by inverting any close vessel over the plants, and with a common pipe fill

it with tobacco smoke, closing the vessel down upon the soil; or they may be killed by scattering on them some strong common snuff, washing it off with a syringe as soon as the insects are dead.

These are all the operations necessary at this season and for two or three months to come. At that time I will, if spared, return to this subject again. It only remains to give my promised list.

T. APPLEBY.

(To be continued.)

QUERIES AND ANSWERS.

PHOTOGRAPHING THICK PLANTS.

"Many thanks are due to Mr. Copland for his article in your number for the 17th instant, which I have no doubt will set many of your readers to work at nature printing. There is one thing requires explanation. It is this—the leaves or flowers to be printed will, as I read the article, be subject to pressure, and that pressure, if the leaves are at all thick, will cause their juices to exude. Query, what effect will the juices or sap of the plants have on the prepared paper if they are to be pressed firmly? and how is any damage arising from such a cause to be avoided?"—A CONSTANT READER.

[The flowers and leaves are subject to pressure, but not sufficient to cause the juices to exude. Only push up the wedges until the specimen lies perfectly flat on the prepared paper. It would be well to pare down a thick stalk. If expressed the sap would darken the paper a little. Although I have copied many plants, every vein being distinctly delineated, I have never been inconvenienced by what you mention.—E. A. COPLAND.]

GRECIAN HIVE.—FOOD FOR BEES.

"May I ask your opinion of the *Grecian Hive*, so much recommended by Mr. Golding?"

"Also, do you *disapprove* of sugared ale for feeding bees? I have been using barley-sugar as recommended in your pages, and find it much more suitable than anything else."—RUSTICA.

[The "*Grecian Hive*," as it is somewhat ambiguously called, has, doubtless, been improved by Mr. Golding; but we are not quite reconciled to a *garden-pot* shape in a beehive—rather too high, as many think, for its width. The bars are pegged down to the straw sides, which renders them less readily adjusted to the proper distances than when a notched hoop is used, with the correct interspaces indicated on its upper edge, in a hive made broader, shallower, and cylindrical in form.

As regards "sugared ale" for feeding bees, it might often do as a substitute in small quantities for a better mixture. All artificial compounds are, however, rendered more acceptable to the bees if flavoured with honey. Mr. Taylor says, "I have used good sound ale sweetened with sugar and honey, and boiled for a minute or two. The usual proportion is a pint to a pound of refined sugar, adding a fourth part of pure honey. A table-spoonful of rum still further improves the compound. Mr. Golding recommends a very similar mixture, to which, however, he adds a tea-spoonful of salt and a glass of wine. Mr. Payne uses lump sugar in the proportion of three pounds to a pint of water, boiled for two or three minutes, and mixed with a pound of honey." After all, barley-sugar appears to find most favour, as the least troublesome, and the most easily introduced within the hive, at this season of the year more especially.]

CONSTRUCTION OF A PEACH HOUSE.

"I intend erecting a Peach house large enough to contain twelve standard trees, say six to be trained under the lights, and six on the back wall; but, as I wish to build the best and most approved house, will you be so obliging as to let me know what sort of a house you think the best? I am not tied to any shape or plan, and have sufficient space and accommodation for any sort of house."—PEACH.

[We should like to understand more thoroughly what you really intend before we would take the responsibility of advising you. Several plans of houses have been given in this work. You would find something on training standards across the house in Mr. Fish's notes last year on Scone and Dunkeld, and growing them loosely as standards, like an Apple tree, as practised at Lord Panmure's. The difficulty chiefly consists in the different ideas suggested by *standards*. You mean to cover at least a part of your back wall, and the trees are to be trained there, and can hardly, therefore, be called *standards*. If the front trees are grown loosely, without tie, or ligature, or support, then they ought to be sufficiently low not to shade those on the back wall; and when thus grown loosely the fruit is brought too much down, and shaded by its own weight. After having tried this and many other plans we prefer the following for Peaches. For a lean-to house, say back wall fourteen feet, front wall two feet, on arches, width twelve or fourteen feet. Plant the back wall with dwarf-trained trees. Four feet from that have a fruit trellis; height at back four feet, and at front one foot. The trees in front will not shade the back wall to any extent. Give each tree a space in length of fourteen feet; that is, place them at that distance apart. The best plan of all is to have a span house with east and west sides, say sixteen feet wide, side walls eighteen inches high, path down the centre, height to ridge from path, say nine feet, with means for plenty of ventilation there. Prepare the border inside, build the side walls on arches, so that the roots go out to the outside border. Plant the trees inside, and train to a trellis on each side about sixteen or eighteen inches from the glass. There is no method will beat this for securing fine-looking, well-coloured, fine-flavoured fruit. Mr. Ferguson has several of such houses at Stowe, and in a previous volume has given a section either of them or others like them. When such houses are in fine order it is a treat to walk along their centre. If, however, you decide on having the trees grown as standards without trellis, and we can do anything to assist you, we will gladly do so. Even in such a case, had we our choice, we would have a span-roofed house running north and south, the walls along the sides, and the trees in the centre; or, if the house did not rise high at the sides, the walk in the centre and trees on each side, or meeting overhead. From the weight of the Peach, however, and the slenderness of the twigs, it will always be better exposed to the sun from having a support.]

SHADING GREENHOUSE PLANTS.

"A REGULAR SUBSCRIBER" will feel very much obliged for any information respecting the best and most inexpensive way of shading a greenhouse during the summer months. The building for which it is required is about forty feet in length, and fifteen feet in width; it is attached to one end of the dwelling-house; aspect full south. There is a bed in the middle, in which some very valuable Camellias are planted out, and it is chiefly for their benefit that the information is requested, as their beautiful foliage suffers every year from being scorched by the sun."

[All things considered there is nothing so good as a blind, because when the sun is not shining the plants will have more light merely by rolling it up. If your Camellias were four or five feet from the glass we do not think they would suffer much if the glass was good; if spotted and speckled it would cause them to be scorched. Whitening is of no great use of itself, and it looks bad, and would fall on the leaves when syringing. Do as follows:—Melt some jelly size, with scarcely any water, say half a gallon of it, and use say half a pint of water. If you have not jelly size use glue or other size, so as to make a strong solution. Into that quantity place about the size of a walnut of whitening, half a drachm glass of turpentine, and as much boiled linseed oil. Stir it all well together, and when very hot draw it over the glass when dry, and, if possible, when the sun is shining. This put on outside will remain until the heavy rains of autumn help to loosen it. Placed inside it will remain longer. If daubed with a dry brush as put on it will look like rough glass. A little soda in the water will soon remove it when that is necessary.]

CONCEALING A KITCHEN GARDEN.

"I am about raising an embankment at the end of my pleasure garden to shut out the sight of the kitchen garden, and I wish to plant some shrubs on the top of the mound. Will you please inform me what will be most ornamental? I also wish to place a few specimen plants on the embankment; be good enough, also, to suggest the most desirable for this purpose. I may state that the bank rises about four feet, and is twenty to twenty-five feet deep, and about ninety to 100 feet long."—H. P.

[You propose doing a foolish thing, probably because such a foolish thing is commonly done. A bank across the end of a mere slip of ground to hide what is beyond is a bad proceeding. There was some excuse for the old farmers who planted their "quick" hedges on banks, such banks making part of the fence at once; but *we* want no fences to keep out Cabbages. These banks are ten times more offensive to good taste in gardening than Cabbages going to decay. Instead of raising the soil four feet we would trench it four feet, and plant higher trees than yours by four feet; then the front would look like the front of a *plantation* if the depth was only ten feet; while your twenty to twenty-five-feet-deep bank will never look more than a *belt* to a stranger; but have your own way in making the face to the bank. Plant a row of *Berberis aquifolia* horizontally, at eighteen inches from the bottom, as they plant quick on banks; water well, and on the top of the bank plant a row composed of the same *Berberis*, golden-leaved *Hollies*, and *Aucuba Japonica* in equal numbers. These will give the same kind of effect as flowers do in front of evergreen clumps.—Plant a row of common Laurels along the side next the kitchen garden to make sure of a thorough screen, and in front plant *Hollies*, *Yews*, and Portugal Laurels, with double-flowering Cherries, *Pyrus spectabilis*, Almonds, scarlet Horse Chestnut, or *Pavia*, Laburnum, and a few Birch. Along the centre and near the sides plant *Laurestinus*, *Rhododendrons*, *Ribes sanguineum*, a few Lilacs, and Guelder Roses, and you will have a good mixture for use and ornament.]

NEPENTHES RAFFLESIANA WITHOUT PITCHERS.

"I have had a *Nepenthes Rafflesiana* under my care these three years. It is about ten feet high, and in excellent health, but has no pitchers on it. I am told it is most likely to be a male plant, and will never have any pitchers on it. I shall feel greatly obliged if you will be so kind as to let me know if there is a male and female pitcher."—JOHN REID.

[All the Pitcher plants belonging to *Nepenthes* have one sex in a flower, and the male and female flowers are on different plants; but that can have nothing to do with the pitchers, for those pitchers are natural appendages of the leaves, or rather, of the foliaceous petiole, which runs out beyond the point of the leaf in the shape of a tendril, formed by the union of the great ribs of the veins of the leaf. These leaves may be said to have two petioles, one before and one beyond the leaf, the latter ending in a pitcher. It has nothing to do with the sex of the plant. In the vegetable world a useful appendage is as necessary for the male as it is for the female. The flowers of these pitchers come on terminal racemes, or a sort of spike, very much like the spike or raceme of the common Rib Grass of our fields. It requires a very high, moist temperature.]

DELPHINIUM FORMOSUM FAILURES.

"Having purchased a packet of *Delphinium formosum* seed nearly two weeks since, and inquired of the vendors when the seeds, if sown on receipt of the plants, would flower, they wrote, 'Push on *part of the seed*,' which I have done in a moderate hotbed. The packet was 2s. 6d., and sealed, with a printed praise of the beauty of the flower; but to me the seed seemed not of a good ripe colour, and I think if the seed was new it ought to be coming up, *but it is not*. In your No. 443, at pages 432, 433, inquiry is made about

this *Delphinium*, and the reply is, 'One-year-old plants are to be planted in a bed this month or next.' I fear I shall not have a flower from the seed I have bought, and I am most anxious to see this *Delphinium* in flower. I should be much indebted if you could find out where I could procure a few plants one year old of this *Delphinium formosum*, as there is yet time to plant them."—M. FITT.

[Messrs. Henderson and Co., of the Wellington Road Nursery, first let out *Delphinium formosum*, but it was raised by some smaller craftsman in Norfolk. You may get the plants from them or other large nurserymen. The plants should be all of one size and strength, and such as will bloom equally through the end of summer and all the autumn. You are in good time yet. They will do a month hence out of nursery pots. It is very wrong to push or force any of the *Delphinium* family, and such plants cannot make bedding plants the first year.]

TREATMENT OF LARGE TRANSPLANTED TREES.

"I have, within the last two months, transplanted some dozens of twenty-year-old trees, both deciduous and others, but, unfortunately, upon the common plan; that is, without any preparation such as you recommend in the way of trenching, &c. Will you kindly inform me whether it would be of any service to have trenches made round each tree, filled with soil that might entice the fibrous roots towards it; or would watering round the trees' trunk, or at the roots' circumference, in the manner you have described in your paper of March 17th, now avail anything? The trees were taken up with as much ball as could be secured round them, and the soil where the trees are at present is moist and flat."—E. L. L.

[All that is necessary to do under the circumstances is to take special care that the balls do not get dry during the first summer after planting. Balls to large transplanted trees very often do ten times more harm than good. They are placed in the midst of loose soil, into which water freely enters, and if they, or any of them, once get a *little dry on the surface*, the rain water and the water from ordinary watering will pass off from it into the loose soil just like water from a duck's back, and one might give ten thousand gallons of water to a tree, and not one drop of the whole reach a single root of it. Balls are the safest in the hands of very experienced men, if they have sufficient strength to attend to the trees afterwards; but depend upon it balls have been the cause of more deaths to trees than to soldiers.]

GOOSEBERRY CATERPILLARS.

THE season is fast approaching when we shall again hear sad complaints of the ravages of these unwelcome visitors.

Some of your correspondents recommend Hellebore, and some tan and other things for their cure or prevention, but allow me to say I think *soot* better than either of them. I last year, in early spring, spread soot thickly over the ground immediately round and under the trees, and I had no caterpillars, but a more plentiful supply of fruit than I ever recollect before. If the ground has not been recently dug let it be lightened up with the hoe, and I think few of the grubs will escape. The price of soot here is one penny per gallon.—T. M. W.

BOX EDGINGS FOR WALKS.

VARIOUS plants are employed for edgings, such as Box, Thrift, Gentianella, some of the finer Grasses, &c., but none is so durable or ornamental at all seasons of the year as *Box*, its greatest objection being that it is a great impoverisher of the soil, and that it affords shelter for vermin. Box is the most efficient and the prettiest plant that can be used for edging. The colour and form of its foliage, its docility as to height, width, and shape, the compactness of its branches, its durability as a plant, its

thriving in all sorts of soils and aspects, and its freshness at all seasons of the year render it the most valuable plant for this important purpose.

Planting Box edgings forms a very important part of the gardener's employment, and unless he plants the edgings neatly they never gain him credit. The mode which I prefer is as follows:—First dig up your ground where your Box is to be planted, or raise it above the level required for your edging. Then tread it hard, and make it perfectly smooth with the back of the spade. If the edging is to be straight strain the line as tightly as possible over the surface; by this means you will be able to correct any irregularities. Then with the back of the spade pat the surface quite smooth, taking away or adding any soil where required. When the top is perfectly even the soil next the

path must be cut away in a perpendicular form, about four or six inches deep, as exact to the line as possible.

The Box must next be prepared. If an old edging has been taken up it must be separated into small plants, and cut square at the top. The Box must be laid against the bank, about an inch above the surface, in order to look neat, and banked up into its place with the loose soil thrown into the path by paring the edge.

When a new walk is being formed the soil should be thrown out to the depth of about eighteen inches or two feet, and then filled up with rough stones to within a few inches of the surface, and the remaining part with gravel.

Box edgings are very suitable for geometrical designs, parterres, or small flower gardens. It should be carefully clipped in spring, about April.—QUINTIN READ, *Derbyshire*.

LONICERA TATARICA, var. PUNICEA.



RAISED from seeds formerly received from Mr. Fischer of Göttingen, and Baron Jacquin of Vienna, under the name of *L. Tatarica punicea*. It has also come up among seeds from Dr. Ledebour.

This plant does not seem to differ in any essential particular from the old Tartarian Honeysuckle, except that its flowers are larger, later, and of a deep rose colour. In these respects it has much more value for gardens; for it is not so apt to be cut off by spring frosts. If uninjured, the

rich tints of its flowers give the bush quite a handsome appearance among early flowering plants.

It is worthy of note, that although this seems to differ from the common Tartarian Honeysuckle in no essential circumstance beyond what has been just mentioned, yet it comes true from imported seeds. It is reported that the berries are yellow, but of this we have no evidence.—(*Horticultural Society's Journal*.)

NEW AND RARE PLANTS.

SYMPHORICARPUS MICROPHYLLUS (*Mexican Small-leaved Snowberry*).

THIS has also been known by the specific names *montanus* and *glaucescens*, as well as by the names of *Anisanthus microphylla*. It is a native of the high mountains of Mexico. It is quite hardy, with small pinkish flowers, and the berries also are pink. It was introduced in 1829 by R. Barclay, Esq., of Bury Hill. A small bush, flowering in summer.—(*Botanical Mag. t. 4975.*)

CIRRHOPE TALUM MEDUSÆ (*Medusa's-head Orchis*).

So called from the long and profuse yellow sepals, rendering the spike like a head covered with dishevelled hair. Native of Singapore, whence it was introduced to our stoves by Messrs. Loddiges. Flowers in winter.—(*Ibid. t. 4977.*)

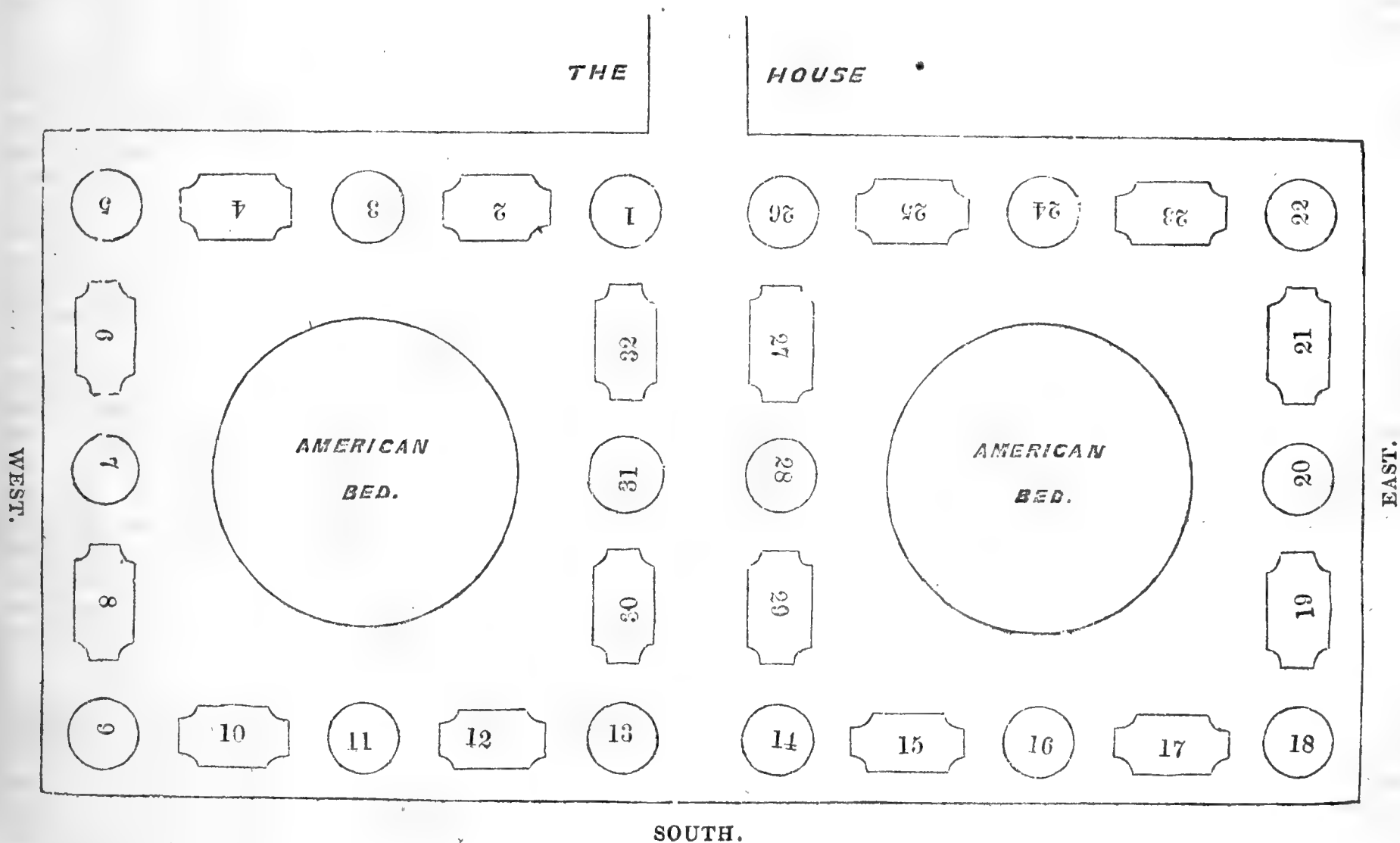
SONERILA ELEGANS (*Elegant Sonerila*).

A very lovely stove plant, native of the Neilgherry Hills, near Madras. Introduced by Messrs. Veitch. Blooms in January. Flowers pink, with conspicuous crimson pistil, and filaments of the same colour tipped with golden anthers.—(*Ibid. t. 4978.*)

COSTUS AFER (*African Costus*).

Native of the west coast of tropical Africa. It was sent to the Horticultural Society by its collector, Mr. G. Don, in 1821, but seems to have been allowed to become extinct. It is figured and described in the *Botanical Register*, viii. t. 683. It was re-introduced at the Kew Gardens in 1855 by Capt. J. H. Selwyn, R.N. On the coast of Africa the natives employ it as a remedy against nausea. Its stem is eaten green, and in taste resembles Sorrel, *Oxalis acetosella*. Flowers white, leaves dark glossy green, and altogether the plant is handsome. Blooms in September.—(*Ibid. t. 4979.*)

FLOWER-GARDEN PLAN.



HERE is one of the best ways of laying out flower gardens on a limited scale. The shape of the long, oblong beds is very artistic. The sixteen neutral beds in the celebrated "Fountain Garden" at Shrubland Park are of that shape, and the arrangement there along the walks, and also at the Crystal Palace, at Kew, and at the garden of the Horticultural Society, is a circle, and one of these oblong beds "turn about." At the Crystal Palace the circles are six feet across, and the oblongs are six feet wide and eighteen feet long. It may be laid down as a rule, then, that such long beds ought to be three times the length of their breadth. The best run of these beds is along the lower terrace-walk in the centre division of the terrace garden at the Crystal Palace, and there are twenty-one of them in each half of that division, each half beginning and ending with a circle; but the circles do not come up so close to the angles of the cross walks as to require the turn of the walks to follow the turn of the circles. In smaller places, however, two feet

verge ought to be the distance of such beds from the walk. No bed ought to come nearer a walk than two feet, and when a circular bed comes in the corners, as in this plan, the corner of the walk ought to be more rounded than is usually done, so as to correspond more with the turn of the circle. There is no objection to this in principle, but some artists do not approve of it, and never put a circle inside an angle. There is a figure for an angle bed purposely, and there are two sets of them to be seen at each end of the terrace garden at the Crystal Palace. They are planted there with scarlet Geraniums with edgings; four large corner beds in each panel.

The flower garden of the Rev. E. Phillips, the incumbent of Surbiton, was altered four years since, and at my suggestion all the flower-beds were arranged as in this plan, except that there are no beds in the centre, nor circles in the corners. In a limited place there is no objection to having Roses or American plants in the same manner as is shown in this plan—a central bed in

each division of the ground; but, thus coming in the centre of flower-beds, they ought to be edged with some *variegated* plant, or a *plant that flowers all the summer*, otherwise they seem out of character as soon as they are out of bloom. For this garden the Variegated Mint is the most appropriate edging, but for Rose beds I would have a yellow *Calceolaria* or a scarlet *Geranium* edging. At all events a mass of evergreens quite close to flower-beds *on the bedding system* ought not to be without a flower edging of some kind.

If this garden was mine I would have three rows round each of the centre *Rhododendron* beds, *scarlet Geraniums* next the Americans, then a row of *yellow Calceolarias*, and the outside row of some variegated or white-flowering plant; but, if I used the Variegated Mint, I would reverse the colours, and put the Mint next the *Rhododendrons* and the scarlet outside, because the Mint in a row looks best when it is fifteen or eighteen inches high, although it may be kept under a foot all the season by cutting it.

I would have all my *Gladioluses* among *Rhododendrons*, nothing being so thoroughly ugly as a bed of them just gone out of flower. All the *Lilies* I would have the same; also *Commelina cælestis*, but no more, unless the bed was very large indeed, when a collection of *Phloxes* would give all the tints common to the *Rhododendrons*.

But to return to the plan before us. The beds along the centre walk opposite the house must be planted in pairs to match, the same colours in each pair, and the same height in the plants, but there is no objection to using two kinds of plants for them; one kind in a bed, or two or three kinds in one bed, and two or three different kinds of the same plant in the opposite bed. All the rest of the beds may stand *each on its own merits* in such a garden as this, but not if the garden formed a part of an extensive place, where each bed on the left all round would need to have its match on the right. Now, when a flower-bed by itself, or in an arrangement like the present, or any other way, is to stand on its own merits, without much reference to the beds near it, it must be planted with more than one kind of plant—that rule is absolute. The body of the bed, however, may be of one plant, and the edging be of a different kind, or two, three, four, five, or more kinds of plants may form the bed, with or without an edging; if only two kinds are used, then you can hardly escape without an edging kind.

The greatest fault in gardening in modern times is the endless chain pattern of yellow and scarlet at the Crystal Palace. I made an excuse for it the first season, as I knew the difficulty of doing so much at once; but I have not the smallest hesitation in saying that it is the most *glaring* example we have in British gardens of “poverty of design.” It has done some good, however; for no one with an “eye” would plant two kinds of plants with strong contrasting colours in one bed, after studying those chains, without a relief colour in white or variegated flowers or foliage. If we keep from *Geraniums* and *Calceolarias* I do not recollect any other plants of which two kinds in a bed would absolutely require a relief edging, although there are very few plants of which a bed would not be improved by an edging, if it had to stand on its own merits, or “tell for itself,” or “stand on its own bottom,” which are but different ways of expressing the same thing.

The first pair of beds, Nos. 1 and 26, should be planted with *Flower of the Day*, or any other variegated *Geranium*. The *Flower of the Day*, planted twelve inches leaf from leaf, and the rest planted with the Variegated Mint, make the best bed of the kind I have yet seen. Nos. 27 and 32, mixed *Verbenas*, three shades of red, or pink, or purple, or all three in each bed. Nos. 28 and 31, *Heliotrope*. Nos. 29 and 30, purple or pink *Petunia*

in each, with a strong *white* edging of *Virginian Stock*, to be sown now in a *flat drill*; the side of the drill to be three inches from the side of the grass; the drill to be three inches broad, and half an inch deep; the seeds to be sown thinly, and the seedlings to be thinned to two inches apart early in May, and before they just show flowers; the tops to be cut one uniform height; then by cutting them on the inside one week, on the outside next week, and on the top the third week, you may have them in full force till October. Nos. 14 and 15, clear yellow *Calceolarias*, and no edging. Nos. 12 and 13, two or three kinds, or one kind of scarlet *Geranium* in each, with or without an edging. Nos. 4 and 23, the same. Nos. 7 and 20, clear yellow. The *Ageratum* in No. 10, and *Salvia patens* in No. 17; and the rest “as you like.” No one can spoil this garden after those beds are disposed of, unless tall plants are put in the beds up near the house. As every one who goes to the expense of arranging a garden is entitled to have a finger in the pie in planting or in suggesting improvements, it is perfect cruelty in an artist to do the whole himself, or begrudge the owner his share in the pleasure. It is quite enough if the artist insists on not sacrificing a principle. There may be ten ways of applying a principle, and if the owner's way of applying the principle pleases himself best, surely there can be no reason why his way should not be adopted in *preference* to the views of the best artist under the sun. The difficulty is to meet with really sensible men as artists. There is no lack of clever men in all departments of art, who know every turn just as it ought to be; but then how few of them will submit to you or anybody else! They must have it *all* their own way. I always act contrary to that. I never *finish* anything I take in hand in the garden way, not even my weekly articles to THE COTTAGE GARDENER. I leave so much for the Editors, and so much for the printers. The same in planting beds, in altering old gardens, or making new ones: I leave so much to be done by those who pay, and the consequence is, they all say I am the most sensible man they ever met with, and I must not break the rule with this pretty garden by planting all the beds; but I can do better, for I can tell how the twenty-one beds of this kind of design were planted at the Crystal Palace last year; the other twenty-one beds on the opposite side of the walk, which cuts the centre of the garden into two parts, were only duplicates of the first set.

The row begins and ends with a circular bed, which is six feet in diameter; the oblong beds are eighteen feet long and six feet across, therefore the outsides correspond the whole way; the eleventh bed is the centre of the row, or key bed, and if you count from 11 to 21 the planting of each bed ought to be as from 1 to 11. In well-arranged gardens everything is done like this on a given system:—

No. 1, a circle, *Lobelia ramosoides* in five circles round the bed, and a patch in the centre. The plants stood at nine inches in the row, and six inches row from row.

No. 2, oblong, *Tom Thumb* *Geranium*, six rows, and eighteen plants in the row.

No. 3, circle, *Emma* *Verbena* in three rows, and a centre patch.

No. 4, oblong, *Calceolarias*, six rows, and eighteen plants in a row, or the same distances as *Tom Thumb*.

No. 5, circle, *Tom Thumb*.

No. 6, oblong, *Larkspur*.

No. 7, circle, *Tom Thumb*.

No. 8, oblong, *Calceolarias*.

No. 9, circle, *André* *Verbena* (purple).

No. 10, oblong, *Tom Thumb*.

No. 11, circle, *Lobelia ramosoides*.

No. 12, *Tom Thumb*.

No. 13, *André* *Verbena*.

- No. 14, *Calceolarias*.
- No. 15, *Tom Thumb*.
- No. 16, *Salvia patens*, pegged down.
- No. 17, *Tom Thumb*.
- No. 18, *Calceolarias*.
- No. 19, *Emma Verbenas*.
- No. 20, *Tom Thumb*.
- No. 21, *Lobelia ramosoides*.

On the opposite half *Ageratum* matched the *Salvia patens*, and the *Emma* and *André Verbenas* were "crossed," that is, one took the place of the other.

In September this arrangement was not quite as when it was planted. The *Lobelia ramosoides* and some other plant which I did not book had failed more or less, and others were put in place of them. D. BEATON.

THE ELBOWS OR BENDS OF IRON PIPES.

As one or two of your correspondents appear to want assistance or information how to avoid the extra cost which they describe as extravagant and exorbitant, allow me to supply the information, which I think would best have come from some more reasonable iron-founder. The proper, usual, and sufficient extra charge is one shilling, say one shilling for each bend or elbow. I have been supplied by various iron-founders, and have always found them satisfied with that charge, and should be disposed to view with suspicion any tradesman who endeavoured to obtain from a customer any very large amount on the pretence of the extra cost of moulding bends or elbows.—W. K. W.

A SKETCH OF THE DUKE OF DEVONSHIRE'S GARDENS AT CHATSWORTH.

(Continued from page 6.)

NEXT in order from the Victoria house are the Orchid houses. This range consists of three houses—an East Indian, South American, and Mexican. The first we enter is the Indian, and here the lover of Epiphytes and aerial cultivation may drink his fill. The whole or greater part of the plants in this house are suspended in baskets. The *Vandas*, *Saccolabiums*, and *Aërides* are good, and of the latter we notice single plants a yard or more in diameter and as much in height, and of several other varieties individual plants are particularly fine. The beautiful little *Saccolabium miniatum* we pass in flower, as well as a plant of the miniature *Phalænopsis rosea*. The large and curious-flowered *Angræcum eburneum* and the *Phalænopsis*-like-leaved *Trichoglottis palens* are likewise at present in flower. The most striking objects, however, that present themselves upon entering are the *Phalænopsis amabilis* and *grandiflora*, a number of remarkably fine plants, some of which are arranged upon the front shelf, and covered with a profusion of bloom. In the next house are two immense plants of *Dendrobium Paxtoni*, one of which numbers over one hundred of its large and brilliant spikes of pendulous bloom, and is truly a magnificent object. Here is also a choice collection of *Cattleyas*, *Dendrobiums*, and some admirable plants of *Oncidium ampliatum*, *O. ampliatum major*, *Lanceanum*, and *Cavendishianum*. The best plants of the group of *Cattleyas* and *Oncidiums*, however, are decidedly *C. ampliatum major* and *Cattleya labiata*. A plant of the latter some months since presented a splendid appearance, numbering thirty distinct blooms; and of the former we are strongly impressed with the idea that we might travel from the Channel to the Tweed without meeting with a more noble or interesting specimen than the one now before us. A plant of the Stag's-horn Fern, *Platynerium grande*, some four feet in width, upon entering, and an equally fine one of *Nepenthes distillatoria*, upon leaving, are both worthy of notice. The Mexican house boasts of some remarkably fine plants of *Dendrobium nobile*, *intermedium*, *moniliforme*, and others, most of which are in flower, and a good general collection of *Stanhopeas* in flower. We notice *Cyrtorchilum maculatum*, *Sophro-*

nitis cernua, *grandiflora*, and *violacea*; the sweet-scented *Epidendrum fragrans*, the curious *Cypripedium insignis*, with its beautifully white-tipped flowers, seemingly gazing you in the face as you pass; the sombre-coloured *Cypripedium venustum* and the large, white-flowering *Cælogyne cristata*,—these and a few others are the principal ones we noticed in flower. Plants of *Lælia anceps*, *majalis*, *autumnalis*, and *Dendrobium Farmerii*, &c., are abundant; and we should mention a fine plant of a lovely, unnamed, and, it is believed, unique *Dendrobium* that throws in the shade all the *Dendrobium* flowers we have ever had the privilege of admiring. In front we remark a number of Australian and North American Pitcher plants, *Cephalotus follicularis* and *Sarracenia purpurea*, with the (if we may so term it) champagne-glass-shaped *Sarracenia Drummondii*, and with a glance at the curious Elk's-horn Fern, *Platynerium stemmaria*, we quit the building, and find ourselves in the kitchen-garden department, and without further preface proceed to the Pinery. This building is heated by the old brick flues, which are still found effectual in heating almost the whole of the forcing houses. The Pines are here all planted out, and appear very healthy and flourishing. They consist chiefly of *Providences* and *Cayennes*, and a peep at them will go far to prove that planting out is not only the most natural and least troublesome mode of cultivating the Pine, but is also, we venture to assert, the most productive.

Passing a large and excellent ridge-and-furrow Vinery, we enter one of the four divisions into which the kitchen garden is divided. Our route lies through an early house for forcing pot Vines, which are here shifted from pots into raised pits on either side of the pathway. This leads us into the large Peach house. This extensive house is almost wholly filled by one tree, from seventy to seventy-five feet in the spread of its branches, and from seventeen to twenty feet in height; and it may, indeed, be termed the perfection of a Peach tree, for its size is only equalled by the quantity of fruit it produces (from seventy to eighty dozen annually). Connected with this range is a smaller Peach house, in which forcing has commenced for some months, passing through which we proceed to the Melon ground. Here are a number of succession and fruiting Pine pits, and several Strawberry terraces, winding round one of which we enter and inspect the Cucumber house. It is a lean-to ridge-and-furrow building, with a good southern aspect; the width of the house inside in the clear is ten feet; it is well ventilated by openings in the front parapet wall, and by corresponding ones in the back wall. On either side is a row of pits over tanks, and between the back range of tanks there is a space of four or five inches for the free circulation of air, and twelve ditto in front, to make room for the hot-water pipes by which it is heated. Altogether it is an admirable house for forcing crops of early Cucumbers, with which at present it is well supplied.

From this house we retrace our steps to one of the principal ranges of forcing houses, and enter a range of Vineries 249 feet in length, and subdivided into eight houses. These are all furnished with strong Vines of the *Black Hamburgh*, the *Sweetwater*, *Frontignac*, and the *Cannon Hall Muscat*. One house, however, can only boast of Grapes at present, and these are a few straggling bunches of *West's St. Peter's*, the remains of a fine crop, which are to be succeeded by the pot Vines, this being the range of late Vineries. At the rear of these Vineries is the Mushroom house, on a line with the sheds for packing fruit, &c. It is of considerable length, and has three tiers of beds on one side of a walk of good width, and two on the other. The fronts and supports of the beds are of cast iron, painted red, and the floor of the house is cemented. Some object strongly to iron or slate beds, but here iron ones answer admirably.

The general crops in the different quarters or divisions last season have been good, but the wall-fruit trees are miserably indifferent. Notwithstanding that one fine Peach-wall has been cemented and heated, still scarcely a Peach worth picking has been produced, and both trees and fruit, as far as our observation extended, have been a total failure. The splendid crops of fruit, however, grown under glass make some amends for the deficiency out of doors, and attest to the ability of the conductor where he has the climate at his own command; for be it remembered the atmosphere and air of the Peak are not to be compared with the light breezes

of Devonshire or Cornwall. Returning we pass another range of forcing houses of the same length and extent as the Vinery below, in all the divisions of which forcing is at its height, and Grapes, Peaches, Figs, and Cherries are "progressing favourably."

We now leave the kitchen gardens and enter upon the lawn fronting Sir Joseph Paxton's residence. This elegant Anglo-Italian villa is of sandstone, agreeably situated, with a commanding and delightful view of the Park, and is surrounded by a lawn, bordering which, in excellent taste, are the banks before mentioned, which, when filled with brilliant bedding plants, lend it an additionally interesting appearance. And after viewing a retreat like this, situated in so picturesque a spot, and surrounded by such congenial associations to the horticulturist, the lover of nature, or the attractions of retirement, we do not feel surprised that a distinguished visitor to Chatsworth, some time since, should have stated that he would prefer Sir Joseph Paxton's villa as a residence even to the stately and ducal halls of Chatsworth House.

But we are now arrived at our journey's end, and, with a lingering glance at the lofty tower of the residence just noticed, we quit at once both Chatsworth and its gardens.—J. H. C., *Alton*.

CULTURE OF HYACINTHS IN POTS.

IN Vol. XVII., No. 438, of THE COTTAGE GARDENER I read of the disappointment of "S. B. R." in growing Hyacinths this season. If you will permit me I will now give an account of my success in growing that universal favourite, and I would remark that never before had I such a list of distinguished names and titled beauties commanding my attention as on this occasion.

Early in the month of November last I obtained a collection of bulbs from Mr. John Slipper, of Villa Nursery, Camden Town, and a splendid sample it was of that gentleman's stock, being of good size and in first-rate condition. In that same month I took new pots, and in each one I put a thumb-pot inverted over the hole at the bottom, instead of broken crocks for drainage. I then put into each pot as much good rich mould as would cover the thumb-pot, and placed one bulb in each pot, resting its base on the top, or rather, the bottom of the thumb-pot, with about half an inch of the mould between the two, and then filled up the pots with the same kind of mould, which just covered the bulbs, but so as hardly to cover their crowns. This done I placed the pots on the floor of a room—not a greenhouse—below the light admitted by the windows, where they were slightly watered once a week, until I was startled by the appearance of my bulbs making, as it were, obeisance one to the other, and all of them raised so as to be nearly on the top of the mould. The cause of this uprising did not immediately occur to me; but in taking up one of the bulbs I found it was the strong rootlets that were growing out, and which could not immediately penetrate the soil, in consequence of its resting on the thumb-pot that had so raised the bulbs, and had nearly turned them topsy-turvy; but by attempting to replace the one I had taken up I found I did mischief, for the rootlets broke off with the least touch, and I believe that bulb began to decay immediately: one of them did, and I think it was the same one. In a few days after this, all, excepting one, had taken hold of the mould, although some of them were very much on one side. They were suffered to remain on the floor as they were for a week or two longer; more liberal waterings were given, and by the expiration of that time the whole, excepting the one, were firmly fixed and nearly upright in the pots, and were putting forth strong, shining buds from the crowns.

I now took a quantity of old moss, and put a thick covering of it over the top of each pot; so as to effectually cover the bulbs, only leaving it a little open immediately over the crowns of each, and once a week I took a tub containing tepid water, and put the pots, one at a time, to stand in the water up to the rim, allowing them to remain in the water whilst I well washed the outside of the pots, and at the same time I put some of the water over the moss. The pots were then put to drain, and were afterwards raised to a level with the light, where they remained; and I soon found, by the rapid growth and the strong, shining appearance of the young

leaves, that all would be right in due time. I continued this treatment, giving them a tepid bath once a week, keeping them from the frost, but giving very little fire heat, and that only for an hour or two in the evening, and by the end of February I had several beautiful spikes of flowers, and the remainder have come into flower since. I had not one that produced a flower-stalk less than ten inches in length; others measured fourteen and fifteen inches, and several of the bulbs produced two such spikes.

This being my first attempt at growing Hyacinths I must confess I was pleased with my success, and felt inclined to exhibit my pets, and for that purpose I sent them out to decorate the windows of other persons, and I assure you they have been greatly admired.

I will just tell you how, before sending them out, I beautified these elegant plants. Many of your readers are aware that a kind of fungus grows on the stools where timber trees have been cut down, also on logs of timber that lie out exposed to the weather. This fungus is of a variety of beautiful colours, and of a fan-like shape, both of which it retains when dry. My children gather much of this fungus after the winter; it is then dry and hard. They employ it with moss in making moss baskets and other devices, and it really looks very handsome. I broke some pieces of these dry fungi, and stuck them round the inside edge of the pots as you would oyster shells round a flower-bed. The moss that I put on the pots at first was not at all disturbed; it was suffered to remain closely adhering to the mould and the bulb; but I took some nice, bright green, fresh-gathered moss in flakes, and covered the old moss therewith, letting some parts pass out between the pieces of fungi, and hang carelessly over the edge of the pots, the edges of the fungi appearing between. Half a dozen of these harbingers of spring, so decorated and placed upon a stand before a bright window, any day from the middle of February to the end of the first week in April, will never fail to be looked upon as something worth obtaining by others besides those who actually possess them.—WILLIAM HENRY B., *Gloucestershire*.

GARDENING AT HAMBURGH.

I WAS surprised to see, in a recent number, an account of the state of gardening at Hamburgh, which can give the readers of your valuable paper but a poor idea of its real state; and it is in justice to my native city and its gardens that I beg to encroach on your space with a few additional remarks, for it appears "KARL" is but imperfectly acquainted with the distinguishing features of the place in question.

For instance, there is not a word said about the seat of Consul Schiller, a namesake of the great poet, but I understand descended from an English family, where there are four stoves specially devoted to the cultivation of Orchids, a fifth large stove to be built this summer, and where there have been such princely sums spent by the owner, himself a connoisseur in this lovely tribe of plants, that his collection is now the most extensive in Europe, comprising a great many of the rare East Indian species.

The magnificent specimen plants in the establishment of the Messrs. Booth, formerly cultivated by Mr. Goode, an Englishman of the highest standing in this particular line, and whose plants would have graced the great London exhibitions, have likewise not come in for a share of attention, although nothing has more contributed to the world-wide fame of this eminent firm than the high gardening carried out at Flattbeck. In fact, without painting in too bright colours, the Hamburgh gardeners have always, by there being some talented English cultivators amongst them, distinguished themselves in really practical gardening, which, I am sorry to say, is as yet but imperfectly understood by a great many throughout the whole country, the great aim there being to make every place a school of science, and subject it to botanical purposes, rather than allowing a gardener to display his skill by bringing a plant to the highest pitch of perfection attainable in a gentleman's garden.

What has been stated about the plants in the Botanic Garden being fearfully huddled together is quite ridiculous; for, allowing it to be true that scanty means are granted, the

place is yet kept up to the requirements of the day, and the plants receive a proper amount of attention and space. By-the-by, the collection of Cycadaceæ is one of the richest in its multiplicity of species.—TH. VON SPRECKELSEN.

NEW BOOKS.

THE BRITISH BOTANIST'S FIELD-BOOK.*—We can heartily recommend this useful little book to the attention of all who are interested in British field botany. It is arranged according to the Natural System, and is the most clear and simple manual on the subject, so arranged, which has come under our notice. We observe, however, a few errors which it would be well to have corrected, as they may tend to mislead the inexperienced; as, for instance, at page 7 of the synoptical arrangement we find *Caryophyllaceæ* placed among Dicotyledonous Exogens; and we would also recommend Mr. Childs in the next edition to give an index of the Genera as well as of the Orders. Many who have a very respectable knowledge of botany are not quite "up" in the Natural System, and cannot always remember the order in which genera occur so readily as they can in the Linnæan arrangement; and it would be a great convenience to them to have such an index. Such a book was much wanted, and we are glad now to see the void so well supplied.

INDEX FILICUM.†—This is a book which has long been wanted by botanists, namely, a ladder whereby to ascend to the intricate labyrinth of the Ferns. Mr. Moore is well qualified for furnishing this help, and the number of the work before us shows that he has bestowed great labour, care, and judgment upon it. The ladder, however, will not reach to the upper story of the labyrinth unless Mr. Moore publishes a companion synopsis of the species. Let all who love Ferns buy this book, for it is only by securing a liberal sale that such works can pay for publication.

BRITISH GRASSES.‡—A very pretty and very cheap serial; but why not render it more useful by giving a magnified engraving of the parts of reproduction? Perhaps a more superficial, ill-written preface was never prefixed to a work than to that now before us. Let one instance suffice to demonstrate its quality. The Bamboo, *Bambusa*, has no petals, or, in the language of botanists, it is *Apetalous*. In Paxton's "Botanical Dictionary" the eight species are so described, the contraction "*Apetal*" being affixed to each. Mr. Lowe, being a faithful copyist, thought this is the name of their native place, and so informs us, at page 4 of his preface, "There are eight species found at *Apetal*!"

TO CORRESPONDENTS.

MOWING MACHINE (J. B. C.).—Any of those advertised in our columns do their work well.

WEEKS' ONE-BOILER SYSTEM (Hot Water).—Write to Messrs. Weeks themselves, or to Mr. Sanders, gardener, Tedworth House, near Andover.

MICE.—D. T. writes as follows:—"The garden which I have under my charge is of considerable extent, and is everlastingly infested with three descriptions of those destructive vermin, which are ruinous to my crops. Firstly, a long-tailed mouse, which until lately I took to be the common house mouse, but which I now believe to be the long-tailed field mouse, or *Mus sylvaticus* of Linnaeus, and which I have not much difficulty in trapping. Secondly, a short-tailed mouse, which I believe to be the short-tailed field mouse; and lastly, the common shrew mouse. These latter two set all my ingenuity, plans, traps, and contrivances at defiance, and I am afraid that this season they will entirely destroy my crops. My cats catch great numbers of these pests to gardeners, but, notwithstanding, I cannot keep them within any reasonable bounds as to number. If, through the medium of your paper, I could be informed of the best and speediest means of destroying them I should feel very much favoured and obliged."

[We shall be glad of any information on the subject. Some parties recommend Owls to be kept. The Kestrel Hawk is also a great destroyer of field mice. Both these birds might be kept in gardens after being

pinioned. We believe that the increase of field mice is a consequence of the indiscriminate slaughter of these birds of prey.]

ROSE CUTTINGS.—KILLING MOSS ON TREES (A Lady).—It is now too late, as you anticipate, to put in *Rose cuttings*. Wait till June, and do them in a slight hotbed, as Mr. Errington did them in 1855. To destroy Moss and Lichens on trees, take a house bucket or pail, a gallon of water in it, a lump of unslacked lime as big as a child's head, and two or three handfuls of soot, to make a dark grey colouring, and paint over the stems while the paint is yet smoking hot. Very moderate heat, such as 60°, will do to stimulate Fuchsias, Petunias, Salvias, Geraniums, and all bedding plants at this season, to make *shoots for cuttings*, and they want no plunging, unless it is more convenient for yourself; neither do they want bottom heat. In the Experimental Garden they put *Salvia* roots into long, narrow boxes in light soil, and place the boxes wherever heat from 55° to 60° or 65° can be had, and when the cuttings are three inches long they are ready for use. All Fuchsias, all Dahlias, all Salvias, and all *Geraniums for cuttings*, do better and are more convenient in these boxes than they are in pots, and it shows that no bottom heat is necessary for them, as no heat to signify goes through a deal board; but of course the heat in a hotbed must be bottom heat for all that. Have you no old *Lobelia fulgens*, the best of the good old plants? We divided our old roots of them last week, and made many plants of them, but yet we are short of 500 good sucker plants of them. One thousand of them, one thousand *Salvia patens*, and one thousand bed Fuchsias can be kept for sixpence during a long winter.

BOTANY (Garden Boy).—A work will be begun publishing in numbers on the 1st of May which will suit you as to the Natural System. It will be duly advertised in our pages. For the Linnæan System there is no work better than Smith's Introduction, which you have. It is quite impossible for us to instruct you in pronunciation if you do not understand the difference between the grave and the acute accent. In the COTTAGE GARDENER'S DICTIONARY that syllable only is marked on which the emphasis is to be laid.

ADVERTISEMENTS (Kate).—We avoid inserting them in the body of the work as much as possible. If you consult other gardening periodicals you will find them in the middle of the pages.

NAME OF DAPHNE (H. A. D.).—It is the *Daphne Dauphinii*.

POTATO SEED (A Subscriber).—Wash the seed out of the crabs or berries, and sow it thinly in drills during the present month. Any unshaded, fresh, light soil will be suitable.

CANKERED APPLE GRAFTS (Pomicolus).—Your safest plan is not to graft from the diseased growths. This is where you erred in the first instance, as diseased old trees almost invariably furnish scions in which the disease has become seated. Your best course will be to cut down the stocks, and have them entirely regrafted with scions taken from vigorous and healthy trees.

UNITING TWO HIVES OF BEES (A. Ferguson).—The experiment of uniting your two weak stocks of bees at this season would probably end in disappointment, if not in the destruction of both. No doubt each contains a portion of brood, which must be sacrificed, as the combs could not be removed into one hive. One queen must also be got rid of, involving difficulty and the risk of many lives. The matter is not improved by storifying boxes, as the withdrawal of the slides would lead to nothing but a battle between the two families, each retaining possession of its own domicile. You should have made the union in the autumn by driving or fumigation. As matters now are, we rather recommend copious feeding as giving the best chance of preservation, keeping the hives warm to promote breeding.

VARIOUS (Clach na Cuten).—In the first place you ought to be made to pay a fine for mis-spelling your assumed name. *Clach na Cuden* (tub-stone) is the badge of Inverness, a stone on which the auld wives used to rest their tubs when drawing water frae the river. In the second place you must alter the shape of the two beds before planting them. The side of a bed next a straight walk, or wall, or any straight line, must be straight also to correspond. You made the shape horribly ugly. Surely *Clach na Cuden* is not yet worn into that shape. The side of the twelve-foot beds should be three feet from the walk. They would look better in plain circles. No one could make colours tell in such shapes. The centre will do very well with Fuchsias, then the tallest scarlet Geranium. *Mangles* is too low to be next the Fuchsias, then *Tom Thumbs*, then *Judy*, and then eighteen inches of *Mangles* next the grass. *Lobelia* is too low for such a large bed as twelve feet across, and *Saponaria* is not a good edge plant. The *Linum grandiflorum* will come easily from cuttings. The ground, six feet across, or three feet from the stems of the Deodaras and Araucarias, should be six inches higher than the rest of the lawn round them, and no turf should come nearer than that for the first five or six years, only a *bare bed*, as one might say, the surface to be stirred often; but a row of Wallflowers round the circle in winter, and some tall annual—as *Clarkia* first and *China Asters* later—may be used to hide the nakedness of the bed, and if you put in one-half fresh soil for these flowers they will not hurt the roots. It will not do to mix fresh dung with an old Mushroom bed. There is not the least harm in planting old Dahlia roots six inches deep. Our next-door neighbour puts them in that depth, and always plants in March.

LACHENALIA (E. B.).—Yours is the *Lachenalia tricolor*, var. *maculata*. By some botanists it is called *L. luteola*. Mr. Beaton will be much obliged by a supply of the bulbs at the proper season of taking up. Of your *Cineraria* seedlings that which is bright blue, with a white circle round the disc, or centre, is very good.

HEATING A GREENHOUSE (S. A.).—What is your wooden tank covered with? Of course wood will give out little heat. If the tank gets hot enough, and is covered with slate, or any radiating conducting material, the tank ought to be large enough to heat the house. We suspect you do not get enough heat into it from your gas stove. If your thermometer got no lower than 34° your *Cinerarias* ought not to have been killed. We do not see that two or four four-inch iron pipes would assist you a bit if you could not raise the water in them above 80° or 90°, which is little warmer than your own blood; and if you cannot heat the water in your tank to 160° or 170°, even if that water is not above two or three inches deep, we fear you would be equally unsuccessful with iron pipes, though they would radiate from their whole surface. We think, if your little boiler is properly heated, you would have

* *The British Botanist's Field-Book*. A Synopsis of British Flowering Plants. By A. P. Childs, F.R.C.S. London: Longmans.

† *Index Filicum*. A Synopsis, with Characters of the Genera, and an Enumeration of the Species of Ferns, with Synonymes, References, &c. By T. Moore, F.L.S., &c. London: W. Pamplin.

‡ *A Natural History of British Grasses*. By E. J. Lowe, Esq., F.R.A.S., &c. With coloured Illustrations. London: Groombridge & Sons.

less water to heat in your tank than in these pipes, but you must have a good radiating covering. A flow-and-return four-inch pipe will be quite sufficient for such a house; but if you do not fill the pipes they must be fixed pretty much on a level. As the tank is there, why not see if the fault is not in your gas stove or boiler?

VINERY FLUE-HEATED (*An Under Gardener*).—If the flue answers why do away with it? For a late vinery two four-inch pipes, crossing the ends and along the front, say a yard from the front wall, would be sufficient. For very early forcing double that quantity of piping would be necessary. For a medium early house two flows and one return.

GARDEN PLAN (*H. Vickers*).—You will see an engraving of it in our pages to-day.

NAMES OF PLANTS (*Z. Z.*).—Your Moss is *Hypnum proliferum*, Proliferous Feather Moss. (*P. P.*).—Yours are *Mesembryanthemum inclaudens* and *Ceterach officinarum*. (*A Constant Subscriber*).—That pretty Squill, *Scilla præcox*. (*Mrs. Edwards*).—The *Tropæolum tricolorum* lying dormant for one year is not unusual; but we think it is unusual for it to have laid dormant three or four years, and now to have grown and be blooming vigorously. (*E. C.*).—We think yours is a specimen of *Diaplas puniceus*. (*J. Newton*).—The Arbutus-flowered Heath, *Erica baccans*. (*A Working Man*).—Notice when the Mosses are in flower, and send us specimens then. We do not know them in their present state.

PLANTS FOR A BORDER (*H. T. Johnson*).—In every instance where we are asked to recommend plants we must be informed of the situation and place. What will succeed in Devonshire will not always live in Caithness. Send full particulars.

WATER RATS.—*James Rollins* will be obliged by any information how to get rid of these pests of his garden crops.

SWEETWATER VINE (*Abel Note*).—The Sweetwater Vine, which is one of the short-jointed varieties, will take some time before it reaches to the height of eight or ten feet out of doors unless your soil is peculiarly adapted naturally to the Vine. We have seen the Sweetwater ripen very well out of doors; and if you are situated in the southern counties, and in a warm locality, you will no doubt get the fruit to ripen. You would not do much good in Grape growing were you to bring the plant inside the window of your staircase landing. If you have any doubt, therefore, about the Sweetwater ripening with you, put the *Miller's Burgundy* or *Early July* in its place, and since it is only just planted you will not lose much time by the exchange.

GARDEN PLAN (*John Williams*).—Your garden is very easily planted. The centre group is quite right; but a single row of *Fuchsia globosa major* along the front of 2, 3, 4, 5, would improve them. These Fuchsias never look better than in sight of water. 6 and 11 very good, but better with a strong belt of white round the edges. The beds round 6 and 11 would need to be planted according as they are seen from the house, so as to bring a yellow bed in each group "next the eye;" then a purple and scarlet Verbena on each side of the yellow beds, and a blue or a white something opposite the yellow. Every plan of a flower garden ought to show the house, if it is seen from it; or, if not, the point from which it is most seen should be given. We say that to you because you are the first who has asked the only thing which a stranger can honestly answer, that is, the colour for such and such beds.

RAISING GERANIUMS FROM LEAVES (*Gallieus*).—"If every leaf of a Geranium can be made into a plant," providing there is a bud to it, and as every such leaf has but one bud, how many buds must be taken with a leaf to make a leaf cutting?—The answer will solve your questions. Never trouble your head about things turning contrary to the "usual thing." Your drawing shows you understand it quite well. It is just as you and Mr. Beaton represent, but you allow older notions to influence your better judgment. Every green part of a Geranium, and of a thousand other plants, will root with or without a bud on it. In a "leaf cutting" there is one bud at the top and no bud at the bottom. The bud at the bottom of a cutting is not left to draw nourishment, but to hinder too much moisture being sucked up, the stem being hardest at a joint.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JUNE 3rd, 4th, and 5th. BATH AND WEST OF ENGLAND. Sec., Mr. John Kingsbury, 10, Hammet Street, Taunton. Entries close the 1st of May.

JULY 8th, 9th, and 10th, 1857. LEAMINGTON. Sec., Thomas Grove.

JULY 9th. PRESCOT. Sec., J. F. Ollard.

AUGUST 8th, 10th, 11th, and 12th. CRYSTAL PALACE. Sec., W. Houghton.

SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.

OCTOBER 1st and 2nd. WORCESTER.

DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.

JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.

JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Swinton, near Nottingham.

N.B.—Secretaries will oblige us by sending early copies of their lists.

FONDNESS FOR ANIMALS.

WHEN, after a storm at sea, the captain sees that the good ship is in safety, that her spars, masts, yards, and all thereunto belonging are in trim, that her hull is sound, that she makes no water, and when he feels that he and all on board have done their duty, he draws a deep breath, and retires to the quiet of his cabin. The member of Parliament, after two months of letters, squibs, promises, canvassings, and doubts, finds himself returned, and, throwing himself into his

library chair, tastes the long-expected rest. The editor, when he gets a holiday, and is free from correspondence, and the everlasting entry of the boy to ask for half a column more, sits down to taste the luxury of having nothing to do; yet, true to the contradiction of human nature, having nothing to do, they must all do something, but that something is pleasant, because they are not obliged to do it, but merely kill their leisure. Just in the same way, at this season of the year, when there is nothing that becomes imperative in the way of poultry news, I, one of your unworthy contributors, feel disposed, from sheer independence, to go into a discursive paper, and to treat of anything that comes uppermost.

Everybody is fond of some live animal. This propensity is not confined to age or sex. If they are not fond of the object, at least they like to govern it. Look at the nice little girl with her kitten; how does she address it? Poor, poor little pussy! She loves it because it is pretty, and because it is alive; but it also appeals to her sympathy; it is poor little pussy; it is helpless, and even her small strength is a protection for it; it looks up to her. And the boy at school—he keeps the only live things the rules will allow; he has cockchafers and silkworms. How he longs for the time when he will be able to have his dog, his pony, his pheasants, and his fowls. See the artisan; above all, see those who are confined by their work to one room. Take Spitalfields, Norwich, Nottingham, Coventry, and, indeed, every place where men are confined to one room, and have not even a yard. There is a pigeon house on the roof, and a canary's breeding cage in his room, or there is a skylark at his window.

Look at that thin man sitting at his loom; his pale cheeks tell of confinement, and the monotony of his life-long task is written on his features. Suddenly he stops; you have heard or detected nothing, but he has. His favourite bird has given the challenge note—the prelude to his song; and now he sings it. Can that be the same man we saw but a moment since? There is colour in his cheek; his eye sparkles with animation; he has left his loom, and now stands upright, wrapped in admiration of his bird; and his bird, when he has finished his song, leaves his perch, and recognising his master, ruffles his feathers, and either in a sort of mock anger or in some other way appeals to him. Many times in the day that little bird is a real comforter; he relieves the monotony of his master's tasks, and appeals to his best feelings.

It would not, perhaps, be out of place here if I were to give an account of what I observed during a daily morning walk some years since. Every day, between seven and eight o'clock in the morning, I had occasion to walk through the heart of the city of London. My way lay across one of the churchyards, or rather, around it; the backs of warehouses and dwellings opened upon it, and I know not, but one of the attics I imagined to be tenanted by the porter in charge of the premises. It was a large window projecting from the roof, but some feet away from the gutter and parapet wall. Here my friend (for I was quite interested in him, though I knew him not from any other of the tens of thousands to be met in the streets) had made his garden. Four large pots were in the gutter; two contained Lilacs, the other two Fir trees; the space between the gutter and the sill of the window was covered with boxes, all containing flowers. I noticed the enthusiast in the first week of April; the buds of his Lilacs were bursting, and at length the taper, sickly stems bore leaves, and then I saw the promise of blossom and a pale, poor blossom appeared. Then I could see a framework put up round the window, and Scarlet Runners, Convolvuluses, and Sweet Peas growing from the boxes to decorate it. The sharp wind blew round a corner and disturbed them, and then he put up a screen. One morning I found he had planted some Wallflowers; there were also French Marigolds, Lupins, and Daisies, and the cheapest of all scents, the "Old Man."

Although this does not read much like a garden to those who look out of their windows and view the trim beds, or rejoice in the skilful combination of colours, or in the possession of such a catalogue of flowers that when you take the list in hand it looks like a tangled ball of string, there is no end of it, yet it looked green and cheerful. Every morning it was watered with a bright green water-pot, with

a long taper spout, and a rose contrived to pour the smallest possible quantity of water, and thereby prolong the pleasure. Listen, you who find the days long. He watered his flowers with one hand, and held his breakfast in the other. And then his pipe: I always wondered whether this part of his breakfast was for himself or his garden. He was lynx-eyed to look for blight; and I have seen him twisting his head in every possible way, until he got his mouth charged with smoke immediately under a certain leaf. The whole contents were then discharged; and, as the blue smoke curled and eddied among the leaves, and the little green torments fell under the influence of the narcotic, satisfaction was painted in his face. He knew every leaf, and when one became "sear and yellow" he plucked it with a sigh. I watched him throughout the season. I saw all the flowers blossom, and I saw them fade. That man loved a garden, and not that only; he had a blackbird and a skylark, and they were placed where the verdure shadowed the cages, and they shared the enjoyment of the garden with their master. Was not this man the better for his love of a garden and of birds? Rush into his room, and tell him he has succeeded to a fortune, and need work no more; tell him that he may now indulge himself; he will not pursue sensual or low pleasures; he will have gardens and birds.

Look at that cart loaded with furniture; and here, by the way, let me ask, Did you ever move? I do not mean bodily; but did you ever move from one house to another? Perhaps you fancied you were furnished as well as most people; but were you not ashamed of the last load? It always looks so shabby—the canvass bottom of the sofa, the old tea-tray, the common dish-covers, and the last lot of bedding wrapped in the patchwork counterpane of the servant's bed. It has been well said, "Three removes are worse than a fire." Well, but this cart contains the furniture of a poor woman, and contains it easily. She sits behind on the tail-board, and her household gods are with her, namely, three children, one canary, and four stumps of Geraniums. The canary, or some such bird, is the only one she can keep, and the seed it consumes comes out of her own bread and butter.

Even a very bad man may be mollified by a bird. Many of our readers, doubtless, perused the execution of a horrible murderer at Marseilles named Matracia. He was a man stained with every crime—steeped in iniquity to his lips. He deliberately warmed his dagger and rubbed it with garlic, because it was a tradition in his country that it made it sharper. He then coolly murdered two unoffending women. What was his request? That his parrot might accompany him to execution. It was granted, and he shed tears on wishing it good-bye on the scaffold. I hate maudlin sentimentality as much as any one, and I am no lover of melodrama. I think and I believe this—sensuality and association with men as depraved as himself had brought this man to the scaffold; but there remained the one good point, and his bird appealed to it.

The associations connected with the love of animals are comparatively pure. The feeling is universal. Canaries, larks, or other singing birds are too tame for some natures. They substitute ravens, magpies, and jackdaws; but they keep birds, and they submit to all their tricks, and to the expense attendant on them. Those in the higher walks of life keep sheep or cattle, horses, dogs, &c.

In whatever class a man may move he is desirous to surpass his fellows. This feeling of emulation is the source of all progress. Hence Exhibitions. If two persons are comparing animals or birds of the same breed there will often be a difference of opinion as to their merits, and then an authority is called in to decide. This feeling is rife among children with their kittens, guinea-pigs, or rabbits. Now, then, we have two propositions. Firstly, that all ages, ranks, and sexes have a natural love for animals; secondly, that they like to possess the best or most valuable specimens. How shall we turn both to account? Let your children have their pets by all means; but be careful to choose such as they can easily govern, and such as will look up to them. You are then causing the better feelings to expand; but if you give them unmanageable ones you cause anger and often cruelty to be the result. Do not hurt their feelings by killing their favourites, and do not tease them by speaking disparagingly of them. Do not let them take to anything which will be inconvenient to keep. The little troubles of

little folks are not less real than those of after life. I was once staying in a house where two little girls had a pet kitten; but this kitten was *de trop* in the house, and orders had been given that when a favourable opportunity offered it should be drowned. An unkind person had told them of the order. I shall never forget the *real agony* of these two poor little girls. They ate nothing all day. It was passed in signals one from the other, and at every moment they stole out to see that their pet was safe. As bedtime drew near it was painful to see their distress. Although generally obedient, on this occasion they did not go when they were told, and at last, when sharply ordered, they burst into tears, and cried, "Oh, do not have kitty killed!" Such torment as this should be avoided.

We started with general things, and have got to children. Let us ascend in the scale. Take the careful man—the town man. For many years he has toiled, he has striven, he has rejoiced in his good fortune, he has steeled his heart, and imposed silence even on imperative wants in adverse times, because he had an object in view. Through the dingy, dusty panes of his counting-house he had visions of green trees and a far-stretching landscape. In the hurry and tumult of active life in business, when his limbs were weary and his temples throbbed, he saw himself sitting under his own vine and his own fig tree; and, when cursed with ingratitude daily encountered, and hurt by unjust suspicion, he saw himself surrounded with the lower order of creation, with animals that would look up to him, and cause the silver cord of early feelings to vibrate and sound soothingly. And his partner, his good, careful wife, who, perhaps, left the country to follow him through good and bad report, in sickness and in health—hers has been no light struggle; she has worn a hard face many times towards her children when her heart yearned to, and pleaded for them. She has repulsed the sons when they tried to coax from the mother that which they dared not ask from the father. She has refused the daughters when they only wished to have things like other people, who, they were sure, were not better off than themselves. She kept the one object in view; she saw, after all her strivings, peace and quiet in the country. And what then? The pent-up desires of youth have not weakened, but now they can be indulged; and they can keep the pets they wanted to keep when they were children.

The men who have been foremost in battle, some of those who have been first and greatest in renown, when the turmoil is over take to their first inclinations, and surround themselves with birds. It would not be difficult to name many, but it is unnecessary. The prize-lists of Agricultural Meetings and those of the leading Poultry Shows will prove what I assert. Gallant men in the Crimea cared for their two or three hens, one turkey, and a goose almost as much as they cared for themselves. It was not an uncommon sight to see a grenadier guarding the captain's poultry, and the fine fellow was often as fond of them as their owner. If on a long sea voyage there is a coop of fowls on board they will not lack attention; almost every seaman will care for them, because he is naturally fond of them. To conclude, the liking is found in every class of society, and long, say we, may it prosper. It is a pure and harmless pleasure, a healthy pursuit, and may boast itself of much practical utility.

POINTS IN THE BELGIAN CANARIES.

YOUR correspondent "C. C." inquires what are the points of the Belgian Canaries, and having been a breeder of this variety for thirteen years I beg to offer him my ideas; at the same time I know not if they are the same as are considered requisite by English amateurs.

The first point I consider is length, the longest bird measured from the tip of the beak to the end of the tail.

Secondly, that the bird should stand erect like a Pouter Pigeon, without stooping or crouching, or being hooped or bent.

Thirdly, it must be slim and slight, not thick and clumsy.

Fourthly, the feathers on the chest should fold over so as to form a frill.

Fifthly, colour to be either a clear whole colour or else evenly and regularly pied, not slurred or blotched.

Whole colours should be bright yellow, grass green, or cinnamon; piers to have a bright yellow ground.

Can any successful breeder of pied Goldfinch mules inform me the art of breeding those birds? I have bred mules from the Goldfinch, Grey Linnet, Greenfinch, Siskin, and Redpole, but cannot succeed in breeding pied Goldfinch mules. Any information on this point would oblige me, and it would doubtless prove interesting to many others of your readers.—B. P. BRENT.

REARING ENGLISH SONG BIRDS.— DESTROYING MICE.

I SEE in your paper directions for rearing English song birds. I have reared a great many every year by taking the birds in the nest when the feathers first appear. I put them in a cage, and entice the old ones to the house by hanging them against a wall; they will feed them regularly, and you will have little or no trouble with them. When the young ones can peck, and the old ones are about to leave them, I place some food on the bars of the cage, and, as the old ones feed them less and less every day, they will peck at it, and soon learn to feed themselves. I also try a few live worms and insects on the bottom of the cage. As soon as they sit on the side of the nest they should have plenty of water to drink and bathe in. I have reared Blackbirds, Thrushes, Larks, Linnets, and many others in the same way for the sake of watching the old birds feed them (except a few which I intended to keep). I recollect, when a boy, enticing some Larks upwards of a mile. I intend to try some Wrens this season. I think they would be useful flying about the greenhouse; they would eat the insects and save fumigation. Of course the windows to be opened must be covered with fine net to prevent their escape.

Last year two common Owls took up their quarters in one of my Pigeon boxes. I had a hole made through the wall near the place, and a large box placed inside, with a roost across. They left the Pigeon boxes, and took to it. I sometimes go and peep into the box *after* they have left in the evening, and can count ten or twelve dead mice, and once a rat. I mention this because I think it might be useful to some of your readers that are overrun with mice.—S. C. H., *Farnham*.

POLAND FOWLS.

SEEING in a recent number a letter signed "THE COMB CHAMPION," about the combs of Poland fowls, allow me to say that I prefer the comb only in the cocks, and none at all in the hens. I have some capital specimens of Polands, and all the cocks have large combs, which I think give them a noble appearance; but my hens have either no combs whatever or very little indeed. I also wish to speak of the good laying qualities of Polands, especially of the Golden-spangled. I have four Golden Pullets which between them laid 100 eggs last month, and in the winter they laid five eggs weekly a-piece. I consider the Polands, Dorkings, and Hamburgs far superior to any other breed *for laying*. The Black Polands, also, are very good layers. Four pullets of mine laid four, sometimes five, eggs a-piece weekly during the winter months. Silver Polands I do not know much about, as I do not keep them.—A POLAND FANCIER.

WHAT COLOUR SHOULD THEY BE?

I HAVE been a breeder of Game fowls for several years, but as yet never have been able to arrive at any definite conclusion what coloured legs the Judges require in the different classes. Perhaps through the medium of your Chronicle I may obtain information that may be useful to me. As regards feather and shape "I am pretty well up;" but why attach so much importance to the colour of their legs? Judgments at our different Poultry Exhibitions seem ever contradictory. At one exhibition we find Black Red Game with white and yellow legs taking the prizes; at another time the prize birds are all dark legs; at a third exhibition we see the first prize pen of White Game with yellow legs; and another Judge says, "I will never give a prize to White Game with yellow legs when I can possibly

avoid it." Amidst this medley of opinions, as a breeder of Game fowls what am I to do?

Another point I can never comprehend is, why, when Black Reds and Duckwings compete together, the Judges give the preference to Black Reds. Good Duckwings are more difficult to breed, and, when first-rate, are thrice the value of Black Reds, and, on the whole, are handsomer birds; yet why, I ask, do Judges, as I know some profess to do, give the preference to Black Reds, when a pen of equally meritorious Duckwings is passed unnoticed?

With very little trouble breeders of Game fowls might lay down a standard of what should be considered perfection in the different classes, and what should be discarded; and thus Judges would gain more confidence and exhibitors more satisfaction, and the vexed question of superiority of colour in the leg be for ever set at rest. I must apologise for trespassing on the space of your paper, but my desire is to see due deference paid to "Old England's Game Cock" at our Poultry Exhibitions; and, instead of commendations on crosses of Malay and Game, attach to them cards of censure or disqualification.—MERRY LEGS.

CHARACTERISTICS OF BELGIAN CANARIES.

IN answer to your correspondent, under the signature of "L. M.," I beg to state that he unfortunately perceives a distinction without a difference. Mr. Moore is perfectly right in his third point, viz., "narrow across the shoulders," but, instead of standing out from the body, as he expresses it, standing forwards towards the neck conveys a better idea of this property; the wings should be *thin*, and lay flatly up to the body, so as to give narrowness to the shoulder.

We consider a high-shouldered bird better than a round one, provided the bird is *very thin, narrow across, and well filled*.

As to the properties of the highest importance in the Belgian Canaries, we should decidedly say shoulder and narrowness across, and we also consider it the most difficult to attain and the easiest to lose.

We are also at issue with "L. M." respecting the closing of the tail as one feather being produced by *in-and-in breeding*, and seldom arriving, as he states, at six inches, or even five and a half inches. There are two classes of Belgians, one with a *fish tail*, and the other *pipied* or closed as one feather, which has led "L. M.," no doubt, to suppose the latter has been produced by in-and-in breeding, which certainly is not the case. We can also produce both clear and variegated birds six inches and a half in length.

Your other correspondent, who signs himself "A BREEDER" in this class, asks for an explanation of Mr. Moore's seventh point, viz., "strip themselves well up." His phraseology is rather peculiar, but he evidently means *voluntarily closing the feathers tightly to the body*.

The properties which I ventured to promulgate are being developed by a friend of mine, and have been submitted to me, which I think you will be in possession of ere this.

There is happily existing in this locality an amount of skill and experience in the breeding of Canaries which I may safely assert will challenge any town in this country, so that whenever you feel at a loss, or my humble abilities fall short of the mark, those of my enlightened friends to whom I am attached and connected will be most happy to render you any assistance in this department.—JOHN ETHERINGTON, JUN.

OUR LETTER BOX.


FOOD FOR A COCKATOO (A. Z. B.).—Bread and milk, with raw fruit, nuts, and green food, as cabbage and lettuce stalks. Meat, bones, and much hemp seed are too stimulating. We know of no cure for a bird of this kind biting off its feathers.

FITS IN PARROTS (M. H.).—Parrots and other birds kept in confinement are frequently subject to epileptic fits of the kind described. There is no remedy for the disease; it is incurable alike in man and animals.

DISEASED BANTAM (*Rustica*).—The Bantam hen described as having been filled with a thickened fluid, with the intestines swollen, and mixed with gristly lumps, was affected with inflammation, which terminated in the effects described. The disease possibly arose from a sudden exposure to cold or wet, and is not likely to affect the other fowls.—W. B. T.

EGG-EATING HENS.—E. B. says, "Will you tell your correspondent 'BAYLIS' that I once cured a Pheasant of her unfortunate propensity to eat eggs by taking a partially-eaten egg from the nest, and substituting in place of the yolk mustard mixed with water to a similar consistence. I then replaced the egg in the nest, and suppose the bird did not approve of the flavour, as I have not lost an egg since."

WEEKLY CALENDAR.

D M	D W	APRIL 21—28, 1857.	WEATHER NEAR LONDON IN 1856.						Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.				
21	TU	Cowslip (<i>P. officinalis</i>).	30.226—30.110	62—27	N.E.	—	53 a. 4	4 a. 7	3 55	27	1 23	111
22	W	Alder Buckthorn (<i>Rhamnus</i>).	30.034—29.967	56—24	..	—	51	6	4 8	28	1 35	112
23	TH	Gooseberry (<i>Ribes</i>).	29.907—29.872	57—37	S.E.	—	49	7	4 21	29	1 47	113
24	F	Fritillary (<i>Fritillaria</i>).	29.891—29.780	59—35	N.E.	—	47	9	sets.		1 58	114
25	S	ST. MARK. PRS. AL. B. 1843.	29.695—29.591	76—35	S.E.	22	45	11	9 a 36	1	2 9	115
26	SUN	2 SUNDAY AFTER EASTER.	29.487—29.457	63—40	S.W.	53	43	12	11 7	2	2 19	116
27	M	Tulip (<i>Tulipa sylvestris</i>).	29.560—29.442	44—32	E.	14	41	14	morn.	3	2 29	117

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 58.6°, and 37.5°, respectively. The greatest heat, 80°, occurred on the 25th, in 1840; and the lowest cold, 18°, on the 24th, in 1854. During the period 102 days were fine, and on 94 rain fell.

ORNAMENTAL GRASSES.

BRIZA MA'XIMA.

(GREATEST QUAKING GRASS.)



Roots annual, and consisting of many white, fibrous rootlets. Leaves arising direct from the crown of the root, about half an inch broad at their base, about four inches long, smooth, milky green, and their edges often

bent inwards, terminating in a sharp point. Flower-stem rather slender, about two feet high, round, very slightly furrowed, with four or five knots or joints, the chief part of its length inclosed in the sheaths of the leaves, the lower part of which is often purple. Flowers crown the stem in a loose, nodding panicle of scaly spikelets, of which the largest are nearly an inch long, and one-third of an inch broad at their base, tapering off to a flat-sided cone shape. When ripe these spikelets are of a very pale straw colour, and have a silvery lustre, often slightly tinged with purple near their base; stalks of the spikelets very fine; the florets are in two rows; calyx of two unequal valves; ovary almost hemispherical, with two points. It belongs to *Triandria Digynia* of the Linnæan System.

The earliest writer who mentions it as grown in this country is Gerarde. He says it was then called "*Pearl Grass* and *Garden Quakers*, growing naturally in some parts of Spain, and it is sown yearly in many of our English gardens."

The term *Quaking Grass* has reference to the spikelets, which are in constant motion, being agitated by the slightest current of air, owing to their size, and the extreme delicacy and length of their stalks.

Parkinson, who wrote a few years later than Gerarde, says this Grass was given to him by Clusius, the botanist, under the name of "the elegant Grass with Hop-like heads" (*Gramens elegans lupuli glumis*), a very descriptive title, and, adds Parkinson, "It is now-a-days among our gentlewomen much esteemed to wear on their heads or arms, as they would do any fine flower or pretty toy to behold, as also to put into wreaths and garlands that the country people make for their sports and pastimes."

Ray, writing about the same time, says that when he sowed it in the spring it produced its flower-heads in August, but if he sowed it in the autumn they were produced in spring. He found it growing wild near Messina, in Sicily, and it is also a native of Italy and other parts of southern Europe.

It flourishes in any moderately fertile, loamy garden soil, and may be sown at either of the seasons mentioned by Ray. The seedlings from the autumn sowing are sometimes destroyed by severe winters.

THE glory has not altogether departed from Chiswick. The Horticultural Society, once effete and powerless

for good or even for evil, is not smuggled up in an attic among the smoke of London. Chiswick is not so far from London as some would have the world to believe it was twelve months ago. In short, to lay allegory aside, the Horticultural Society is on its legs again.

Following the course we have invariably pointed out, a few true men stood shoulder to shoulder, and urged measures which were ultimately carried; a new and popularly-elected Council was appointed; and to that Council is owing the present hopeful condition of the Society. Laying aside all the conventionalities of the old school—their predecessors—they have taken the bull by the horns, and, regardless of dictators and dignities, they have put matters on such a footing as we always said could not fail to raise the Society even above the position and influence it ever before occupied.

It is well known that in the Society there existed those loathsome creatures called toadies, tale-bearers, and earwigs, who preyed upon its vitals and checked every appearance of healthy development. Well-intentioned plans were frustrated, works in progress were blighted, and ultimately the Society became fossilised. The first step of the new Council was to melt down all this kind of abomination, and to remodel the whole establishment.

The whole of the garden operations have been placed under the control of Mr. McEwen, one of the best gardeners in the kingdom, who is responsible to no one, and calls no man master, but the Council. Mr. Robert Thompson, who has shed so much lustre upon the Society, is retained as the observer and examiner of fruits, and these form the responsible staff of the garden. Now let us see the result of these arrangements. As we long ago foretold, members are now flocking in, and, instead of a casual dropping in of ones and twos, we have them in tens and twenties; and so great is the rush for admission, that it was proposed at the last meeting to ballot them, as Mr. Beaton says, all "in a lump" instead of singly.

Let us run down to the garden and see what is doing there. What was a short time ago so much of a wilderness and a solitude, that we have known the one or two individuals who were doomed to drag out their weary existence there to startle if they heard any other foot-fall than their own, is now a perfect hive of life and industry. Mr. McEwen, in truth, had work to do, and he is doing it most effectually; and we are happy to state that he is well and liberally supported by the present Council. In that part of the garden known as "the Diggings," or, as the direction board calls it, "the American Ground," and which cost so much lavish expenditure at a time when the funds could ill afford it, will soon become a reality, and not a *toy*. Mr. McEwen has completely reconstructed it, thrown it open, and given it an extension and expanse which will make it worthy of the representative Society of the greatest horticultural country in the world.

That long, deep, and narrow gash on the south side of the orchard, known as "the Doctor's Ditch," but

formerly a nice gravel walk, bounded on both sides with handsome specimens of fruit trees, and on which visitors, contrary to orders, *would* promenade, "and wouldn't be told" until a great deal of money was spent upon digging it away altogether, so that, if they would walk there, they must walk in a ditch—this ditch has been filled up, and, as a matter of course, Mr. McEwen found a better purpose for it, and has planted it with some hundreds of Raspberries.

The conservatory, too, has not escaped. Instead of the large Acacias, Brugmansias, and such other plants as would have been in a more fitting place at Kew, there is to be a broad centre walk from one end to the other, with a clump in the middle, and this is to have fine specimens of the fruit trees requiring protection planted on each side.

The arrangements for the grand Show are of a most gigantic description, such as were never seen in this country before. It is impossible for us to enter into particulars here, but they will be found in our advertising columns of this day. Already numerous applications have been made for space, and it has been suggested that the Exhibition should be kept open for a fortnight. In this we quite concur, and we would also suggest that there should be several "shilling days." Look to "the million" for support; a *class* support is always a partial one, and as it is money which alone can enable the Society to make itself useful, they had much better apply to "the million" than the money-lender. The Zoological Society have found the advantage of this course, and we will venture to say that neither the Zoological Society nor zoology are one whit the less scientific, or one degree less respectable, because Brown, Jones, and Robinson, with their wives and children, have access to the gardens by a sixpenny admission every Monday. On the contrary, zoology is rendered more popular, and the funds of the Society are vastly increased. Such a course we trust the Horticultural Society will pursue; and, above all, let them remove that most objectionable restraint which requires the public to run about "becking and booing" to this one and that one before they can see the insides of the walls of Chiswick Gardens. Let those pay who are willing, and those who are not, why let *them* go and beg.

SPRING FLOWER-BEDS AND MIXED BORDERS.

WE had a deep blue edging for spring beds in Surbiton this last March, and a scarlet edging plant, a pure white flowering plant, and a clear yellow one for masses or beds. Two good beds and two distinct edgings for them so early as March, and as rich as we can have for the season, make a fair beginning, which I notice thus early in order to give me an opportunity of putting a question to every reader of THE COTTAGE GARDENER without a single exception; and that question is this—What plants do *you* grow or prefer for "spring flowers," either as beds, or as edgings to beds, or in mixed patches on a border? Or, if you have no garden or plants, could you not tell us the names of *all* the flowers you recollect to have seen since last Christmas in the gardens of your friends and neighbours, or in those by the wayside? I mean to give my whole strength and power to this subject until it is as clear as a sunflower; but if people would look up their accounts, and pay me what little trifles may turn out in my favour, we could between us make spring flowers as clear as bedding Geraniums, and

that is just what we all want and are searching after. There is nothing more simple than to note down the names of plants as they come into flower in the open ground between this and the middle of May, with or without remarks about them, unless it be to recollect all the kinds one had seen from New Year's day to the end of March.

I saw an abundance of the red *Virginian Stock* in flower last March from self-sown seeds in August. This and the white kind might be relied on for two beds on the average of Aprils; but I mean this way of noting only as a guide to young people who are not yet acquainted with the ways of booking their thoughts and their experience. I saw the plant in flower, which is the *experience*; and I think so and so of it, which amounts to *thought*. There is no harm in giving one's thoughts about flowers, but I shall be thankful for the "experience," and more thankful for the two together; and I look to the rising generation for them, or one of them, with greater confidence than to older people; not because the rising generation are deeper in my ledger than their fathers and mothers, but because they are more "supple," as people say in Scotland. The meaning of "supple" is twofold, the first meaning being *elastic*, and the second meaning being an imaginary state of the mind and body in which the joints are well oiled with elasticity, or buoyancy, or willingness, or merriment and fun, or all put together. Therefore I do not mind whether young people are in fun, or frolic, or in earnest, if they but give us their experience and thoughts on spring flowers. I shall "keep count" to see if they or the old folks send us the most information on the subject; but the rest of the world, between the old and the young, shall have a neutral column for themselves, and I shall go on showing how the work may be done off-hand as soon as it is thought of.

At the turn of the new year we had nothing in bloom hereabouts except the Christmas Rose (*Helleborus niger*); then the single and double *Snowdrops* and the *Crocuses*. I like the double *Snowdrops* the best. They are sold by the bushel, peck, or quart, or by the hundred or dozen, and the beginning of October is the best time to plant them; but the truth is, they and the common *Crocuses* may be transplanted or planted any day in the year except Sundays. Now is a very good time to transplant them. All temporary beds of *Crocuses*, if the "roots" are to be removed this season, should be so removed the moment they are going out of bloom, unless they can be left to ripen the leaves as they are. For the *Snowdrop* nothing is so well as a *single row*, not patches, and no one can plant them too close to the edging, whether it be of Box, or of grass, or any other kind of edging. Then if you make certain that the *Crocuses* are just four inches inside of the *Snowdrops* you can stir the space between them at any time, and you can sow a row of seeds for an edging between the two, or transplant seedlings into that space without disturbing the bulbs.

Nothing looks more shabby in these days of scientific gardening than to see heaps and heaps of spring bulbs all over the borders, as if they were sown from the mouth of a cannon. Every leaf in a garden in these days ought to grow, as it were, in the proper place for it. As to flowers they must not be half an inch out of place, whichever way you mean them to tell. I mention this particularly to put it out of any one's power to sham and shuffle, as is usual at this season, by suggesting that this is not the right time to move bulbs.

The two bedding plants for March, *Doronicum Austriacum* and *Arabis alpina grandiflora*, came into flower hereabouts this season before the middle of the month, the *Arabis* on the 9th, and the *Doronicum* on the 14th, in my own garden. The true old *Arabis alpina* is not seen anywhere about London that I know of, while the nursery variety called *grandiflora* is an universal plant about suburban gardens, where it comes into flower

some seasons as early as the first week in February. Both of them last six weeks in flower. The *Hepaticas* make the best edging for both of them—the single or double blue to edge the *Arabis*, and the double red to edge the *Doronicum*. The four could be safely removed to another place as soon as they were out of blossom to make room for something else. Most of the London nurseries can supply *Hepaticas* by the hundred as cheap as *Polyanthuses*, and much cheaper than the florists' kinds.

I think I mentioned, last spring, having seen the largest stock of *Hepaticas* in pots I ever saw at the Clapton Nursery. Mr. Low divides them in September as one would part an old Strawberry plant, puts the "offsets" into small pots, and keeps them in winter under the stages for the greenhouse plants, where I saw thousands of them in flower last February twelvemonth. I thought then of what folly can do in leaving whole "lumps" of these beautiful plants without dividing them till they died out with sheer strangulation, or inch by inch, for want of nourishment. They belong to "the flowers of our childhood," and all such ought to be as common, at least, as *Crocuses*. There were two single white *Hepaticas*, and both are scarce now. *Alba* is the scarcest. It had red anthers, which made a blush tint on the white of the flower; and a plain white one, called *nivea*. This, also, is rather scarce. I saw one row of it the other day in Mr. Jackson's Nursery. Mr. Jackson divides his *Hepaticas* in the spring just as they are going out of blossom and beginning to push up new leaves, and "beds" them out in the open ground at once. All their best *Delphiniums* I saw were done in the same way at the end of March. D. BEATON.

(To be continued.)

WINDOW GARDENING FOR SPRING.

(Continued from page 19.)

WE have hitherto confined our attention to those operations necessary to keep plants healthy for certain periods, however they may have come into our possession, whether given by friends or lent by, or bought from, a nurseryman. What we will now discuss has reference chiefly to plants which we wish to keep on from season to season by our own unaided skill, or to the furnishing ourselves with nice little plants from seeds and cuttings—a matter of great importance to window gardeners, as it is seldom desirable that our plants should assume large proportions. This last division would naturally first claim our attention, but then it would not form such a good sequel to the operations to which I have previously alluded as

POTTING, or rather, REPOTTING, as many of the plants we have tended so carefully and are looking so well will either be demanding more pot room, with fresh earth round the old ball, or fresh earth in a similar or a smaller-sized pot, by getting rid of most or part of the old soil. The month of April or the end of March may be considered very suitable times for such work, and without entering into the consideration of the theories which show the importance of fresh soil, especially to pot plants, we will assume that this is granted, and rather allude to those minutiae that are intimately connected with success.

1. If New Pots are to be used fresh from the kiln it will be advisable to place them in a tub of water for several hours, allowing them to drain and get thoroughly dried before being used. The *rationale* of this would at once appear if you saw a bricklayer building a wall or a tank with cement. He places his bricks in a tub of water before using them, not only that they may be wetted, but that the dry air may be driven out of them, as without that precaution the dry air would suck moisture from the cement, and there would be an imperfect union between the cement and the bricks. In proportion to the porosity of new pots would they extract moisture from the soil, and there would be a danger of a vacuum being formed between the pot and the soil, which would greatly deceive you in your future waterings.

2. OLD POTS are just as good as new, only they must be scrupulously clean inside and out, and dry when used. No one deserves to have a flourishing plant who transfers it to a dirty pot, with grains of earth hanging inside, and green slime sticking to the outside. If a plant is placed in a clean pot, and becomes well rooted, and you wish to repot it, the ball will come out as clean and nice as a cheesecake; but if the pot had been dirty or wet the ball will come out broken, and with the roots strained and broken. For cleaning pots, if not very bad, nothing is better than a scrubbing-brush and plenty of clean water. If very dirty and green they may be soaked in soap water with a little soda in it; but after being scrubbed they should pass through clean water before being dried. It always betokens slovenliness to find dirty pots lying about in all imaginable corners. If kept clean and nicely piled up they are always fit for use.

3. A prejudice has until lately existed in favour of *porous*, soft-burned, red pots, as though the more porous they are the better they act as a substitute for good drainage, whilst, from the evaporation of moisture thus proceeding from the sides of the pot, the finest roots are subject to alternations of moisture and dryness, of heat and cold. For window purposes, if the pots stand exposed, in general I would prefer them to be hard burned, and also of a stone colour, in preference to red or a more dark colour. Some clay burns nearly white, and that I should prefer, as the soil would be kept in a more equal temperature, and there would be less absorption and radiation of heat. Where the little extra expense was not an object, very neat, strong pots might be made of zinc, and the outsides might be painted so as to look very ornamental. Almost every plant I have tried succeeds better in a zinc than in an earthenware vessel. I had long used worn-out zinc pans for striking cuttings in; but Mr. Fleming was the first to use them for growing large ornamental plants in. So far as I am aware iron vessels do not answer so well, though I have had plants in them in great luxuriance.

4. SOIL.—The most unsuitable, perhaps, is that taken from the little gardens in large cities, because it is so impregnated with soot, gas, and other impurities. In the country, supposing that a piece of ground has been ridged up all winter, a little of the flaky surface scraped off on a fine dry day in spring will grow well almost any plant usually cultivated in windows, with the addition of a little sand or leaf mould. So little suffices for window plants, however, that it is best to get fresh soil if possible, such as may be obtained from the hillocks thrown up on the sides of a highway in loamy districts, consisting of the loams of the neighbourhood and the ground flints of the road, just taking it after removing the grass, and choosing that part where the grass is not soft and broad bladed, but stiff and sharp like pins and needles. If you go to a common take the same precautions. I have helped to point out the best places for many a handkerchief full on Primrose Hill and Hampstead Heath. If you did not mind a little trouble the turfs obtained of such stiff, wiry grass, cut about an inch and a half or two inches thick, would make the best of all composts for general purposes if you could keep them a year before using them, or if you would take the trouble to place the grassy part of the turf on an old shovel, and char it well over a bright fire. This allowed to sweeten for a month or so afterwards in a dry, airy place would be in capital condition when torn to pieces by the hand, and all worms and insects would have been thoroughly done for.

HEATH SOIL.—Fibry vegetable matter, mixed with sand and flint, and found in elevated districts where the Heath grows, is indispensable for fine hair-rooted plants, and is very valuable for mixing with other manure and soils, chiefly for regulating moisture and keeping the compost open.

Unless in very sandy districts *sand* will also be useful for keeping the soil open. The best is silver sand, so frequently advertised, found so plentifully at Reigate, several parts of Bedfordshire, and elsewhere. The next best is that which is obtained in gullies in the highways after heavy rain, consisting, in fact, of the ground stones of the road. When river or pit sand is used it is desirable to wash it in a tub, and then dry it, which gets rid of much mineral and other impurities. The washing is effected by stirring the sand well in plenty of water, and pouring off the water repeatedly, the sand remaining at the bottom of the tub. All these

matters are done sooner than I describe them, and the extra care may be expected to be followed by extra success.

Soils that would grow plants very well if they were planted in them in the open garden in summer may not suit plants in pots. If that soil is rather sandy and open the roots will extend freely. Though rather dense and loamy the bulk of soil in the garden prevents many of those alternate shrinkings and swellings which would be hurtful in a pot, because the shrinking up when dry might leave an empty space round the sides of the pot, to the injury of the best roots there, and requiring some trouble to get the whole thoroughly moistened again. Hence the importance of using a soil rather sandy than otherwise. The following mode will help you to determine the soil's nature. Place a little bit of the soil in the palm of your left hand; wet it, and work it into a paste with the finger of the right hand. If it feels soft and unctuous under the finger you may add a third of sand or other open matter. If it feels gritty and rough little or no sand will be necessary.

MANURES.—The heath soil I have alluded to not only keeps other soil open, but from the vegetable matter it contains acts as the best assistant to most window plants. The next best is leaf mould, formed of decayed tree leaves of the deciduous kinds. Almost all may be used when eighteen months old except the Oak, which should always be above two years. When pretty well decomposed they should be kept in a dry place to make them sweet and arrest decay. The next best is cowdung, collected in dry cakes from a pasture, piled up and kept dry and open before being used for a twelvemonth at least. Hotbed dung, however rotten, sheep dung, &c., should be used very sparingly, and more in the way of surfacings than mixture with the soil.

The soil when used should neither be *dry* nor *wet*. If very dry you will never wet it thoroughly without setting the plant in a tub. If very wet it will go together like a brick, and it will require great care afterwards to bring it to a healthy, open state. The following will be a sort of guide. Take a handful of your soil and squeeze it very hard. Unclasp your fingers, and leave it in the palm of your hand. If it remains in a piece, showing the marks of your fingers, it is damp enough. If it falls down as soon as you unclasp your fingers, without leaving or retaining the marks of the pressure, it is too dry. If you can lay it down on your potting board somewhat carelessly without its crumbling to pieces it is a sure sign that it is too wet. You will soon find it out after a few experiments, and know when it may be necessary to dry more, or add drier soil, or to use the rose of a watering-pot and several turnings with a trowel or spade in order to make it moist enough. Thousands of plants have been ruined from inattention to these simplicities.

Unless for very small plants in small pots the soil should not be *fine*. A sieve should be rarely used. The roughness of the soil should be in proportion to the size of the shift and the size of the pot. For instance, in a four-inch pot we should like a good portion of the soil to be as rough as peas. In a six-inch pot we would in addition have many pieces as large as beans, and in a twelve-inch pot a good many the size of walnuts; and to promote openness of texture, knowing that even the soil most full of vegetable fibre will run together as the fibre decays, we would use, whenever we could get them, little bits of charcoal and pieces of sandy, open freestone mixed with the soil, or put in as the potting proceeded.

One word more as respects soil. It should not only be moderately dry and rough, but well aired, and fully as high in temperature as that enjoyed by the plant to be transferred to it, so that the roots, even the finest of them, are not chilled, this heat being imparted by the direct rays of the sun, or from being placed near a fire if necessary.

5. DRAINAGE.—This is the next thing to be attended to, and will ever form an element of success in all cases where a plant is to remain several months in the same pot. The best mode of covering the hole in the bottom of the pot, I believe, would be to have semicircular caps of zinc to place over them: no worms could then enter from below. The next best is a rounded piece of broken pot, with the *convex* side downwards, and then smaller pieces placed over that, with the *concave* side downwards, a layer of smaller pieces still, terminating with the finest, about the size of Radish

seed, and then a layer of green moss or chopped straw, with a covering of the roughest of the compost. The moss is most valuable as a moisture equaliser, and it, or the straw, will keep the soil from clogging up the drainage. A little of the rough soil thrown over the rough compost, and your pot is ready for the

6. **REPOTTING OR SHIFTING OF THE PLANT.**—Yes, but then the plant itself may not be ready. In a similar dilemma I even now think I see a bright-eyed girl pounce upon four pots out of the twelve, set them aside, water them, and allow them to drain whilst we together attended to the other eight. She knew, for reasons previously alluded to, that no plant should be transferred to a larger pot whilst its ball of earth was dry, as no mere common watering would ever moisten it afterwards. A due degree of moisture secured, the next point is to see, in general cases, that the plant stands no deeper in the soil of the new pot than it did in the old one. As a general rule pots ranging from three to six inches are large enough for windows, unless when we wish a specimen, as a Fuchsia, to fill the whole window; but even then such a plant would be better in the verandah or balcony. Small shifts should therefore be the rule, increasing the size of the pot from an inch to an inch and a half in diameter.

Another matter of great importance must also be attended to in potting, namely, placing the fresh earth not so firmly when rapid growth is the object. Pack it rather firmly when you wish to stimulate flowering. As a sort of guide we will cite a few examples that are likely to occur at this time of the year, which will show how our treatment should vary according to circumstances.

Here is a very nice Geranium plant, a cutting of last summer, in a 3½-inch pot, crammed with roots, and wanting watering very often to keep it right. Prepare a five-inch pot; take hold of the pot with the plant in it; spread the fingers of the left hand over the surface of the soil; with the other hand turn the pot topsy-turvy; strike the rim of the side of the pot farthest from you on the edge of whatever you use for a potting bench, and instantly the bottom of the ball, with its drainage, is looking up in your face, and you remove the larger pieces of drainage, leaving the smaller alone, and, quick as thought, reverse your plant again, and place it in the new pot, after you have disentangled the fibres along the side of the ball with your fingers or a small stick, so that they may easily enter the new soil. If the ball is at all likely to break, hold it by one side, and apply a flat, blunt piece of wood to the other, this piece of wood, like a spatula, also being necessary for firming the soil at the sides if the fingers cannot get down, but should not be used if it can be avoided if there is any risk of touching the roots with it. It is better to give a few knocks with the bottom of the pot on the potting board, and to firm moderately with the fingers at the surface. Watered so that the outside fibres do not suffer, and shaded for a few days in bright sunshine, growth will then proceed rapidly, and there will be more strength to bring strong trusses of bloom.

But here is another plant of the same age, the leaves becoming yellow, and the soil lumpy, and wet, and sour, from the drainage being defective, if ever it was right. It would waste the patience of Job to make that plant right in that soil. Turn it out in a similar way. You observe there are only a few roots, and if you attempt to remove the clogged soil, away the roots go with them; and this you do not like, as it is a keepsake from one who might judge of you by the appearance of the plant. Keep the ball, then, in your hand, but reverse it, so that in both hands you can hold it in a pail of water, and agitate it gently there until every particle of soil is gone, and nothing remains but the roots. Repot again into a smaller-sized pot if possible, with a good portion of sand in the soil. Shade from sun, and give little water at the roots until they are growing freely, preferring to moisten the leaves.

Here, again, is a favourite Myrtle getting stunted, but it must not have a larger pot. Disentangle the roots with a pointed stick, and shake away a portion of the soil, or get rid of most of it in water, and pack new soil among the roots again in the same sized pot. Here are Fuchsias that have been kept in a loft; the buds are just breaking, the roots are very dry, but the plants must not be much larger, though it is desirable they should be very healthy and flower-bearing.

Watering and top dressing the old pots and using liquid manure might do very well, but I should prefer shaking off as much of the old soil as would come, washing most of the rest away in a pail of water, allowing the roots to drain, and then packing them, after a slight pruning, if there was anything the matter, among fresh soil in a similar sized pot.

But here is a nice little plant, a cutting of last autumn and a grand sort, kept slowly growing in a small pot all the winter in the window, and that pot is full of fine healthy roots. It should be treated exactly as mentioned for the young, healthy Geranium.

R. FISH.

(To be continued.)

THE CARNATION AND PICOTEE.

(Continued from page 20.)

TWELVE NEW CARNATIONS AND PICOTEEES.

1. *Capt. Thompson* (Puxley).—This eminent raiser was very successful last year in producing new varieties. *Capt. Thompson* is a scarlet bizarre Carnation, of fine form, distinct colour, and good stout petal.

2. *Omar Pacha* (Puxley) belongs to the same class as the last, the scarlet colour preponderating; very excellent.

3. *Earl Stamford* (Elliott).—A purple-flake Carnation, much improved, well worthy of cultivation, fine petal and substance.

4. *Regulator*.—Belongs to the purple-flake class, but very distinct; clear white ground and fine form.

5. *Defiance* (Puxley).—Very fine scarlet-flake Carnation; a decided improvement on the class; has taken several prizes; extra fine.

6. *Lord Belper* (Turner).—I do think this will beat the hitherto unconquerable *Flora's Garland*. It is a clear rose-flake Carnation; good form; a decided hit.

PICOTEEES.

7. *Eugénie* (Turner).—A large-bloomed, light red-edged Picotee; extra fine form; well up in the centre.

8. *Mrs. Lochner* (Turner).—A heavy red-edged bloom of great substance; bright and distinct.

9. *Mrs. Hobbs* (Turner).—A Picotee with a light red edge, large bloom, good form and substance.

10. *National* (Kintland).—A light-edged Picotee, full, without bar, delicately fine in the edge, smooth and fine in habit.

11. *Mrs. Turner* (Dodwell).—A light rose-edged Picotee, full size, large petaled, good form and substance.

12. *Sultana* (Turner).—The edge of this fine Picotee is what florists term intermediate, that is, between a light edge and a heavy edge; colour bright red on a clear white ground; large bloom and smooth petal.

(From 7s. 6d. to 10s. 6d. per pair.)

NINE GOOD OLDER VARIETIES OF CARNATIONS.

1. *Silistria* (Puxley).—Scarlet bizarre.

2. *General Simpson* (Puxley).—Crimson bizarre.

3. *Hope* (Puxley).—Crimson, finely marked.

4. *Major Teesdale* (Puxley).—Crimson, extra large.

5. *Beauty of Woodhouse* (Mansby).—Purple flake.

6. *Exit* (May).—Scarlet flake, extra fine.

7. *Victoria Regina* (Headley).—Scarlet; a large flower, with bright stripes.

8. *Flora's Garland* (Brooks).—Rose flake; a good old variety.

9. *King John* (May).—Rose; extra fine.

(3s. 6d. each pair.)

NINE GOOD OLDER VARIETIES OF PICOTEEES.

1. *Dr. Pitman* (Turner).—Heavy red edge, pure white, without spot.

2. *Mrs. Dodwell* (Turner).—Heavy red edge, with

very large petal; distinct, but sometimes comes rather thin.

3. *Prince Albert* (Headley).—Fine dark (the darkest) variety.

4. *Bessie* (Turner).—Intermediate, purple edge, fine form.

5. *Finis* (May).—Light edge; a superior, distinct variety.

6. *Mrs. Aitken* (Turner).—Intermediate, purple edge, full and constant.

7. *Alice* (Hoyle).—A heavy, rich, scarlet edge; fine.

8. *Lady Grenville* (Turner).—A distinct, shaded, scarlet edge, pleasing and novel.

9. *Mrs. Drake* (Turner).—Heavy scarlet edge, large bloom, and a good form.

(3s. 6d. to 5s. each pair.)

T. APPLEBY.

Kew Gardens.—In Kew Gardens the living plants, which number about 15,000 specimens and varieties, are all named in a conspicuous and rather expensive manner on iron, tin, or wood labels. The remaining one-third or less are written on black or wooden tallies, and generally attached to young or recently-received plants, which will in time bear the larger and more costly labels. A number of duplicates in the gardens are unnamed. In the Museum of Economic Botany almost all the specimens are labelled with both the common and the botanical names. The number of visitors to the gardens and museum of Kew last year was 344,140, which is an increase of 16,150 on the year of the Grand Exhibition in Hyde Park. 2,432 catalogues were sold.

PAMPAS GRASS.

THAT part of your notice of the *Gynerium argenteum* (Pampas Grass), on the 24th of March, which describes the soil of those vast plains, the Pampas, as peculiarly dry is hardly correct. Having resided there I feel it right to correct the error, and the more so as I think correspondence in your pages is often productive of much good.

So far from the climate being peculiarly dry it is subject to a periodical wet season, and also to frequent heavy thunder storms. The soil is very retentive of moisture. The face of the country, as is well known, is for hundreds of miles perfectly flat, and is intersected by numerous brooks and an immense number of lagunas, or shallow, reedy lakes—so shallow that an animal may at all times wade through them—and on the banks of which, as the water recedes, evaporates, or flows away, a rich pasture springs up, affording ample food for the immense herds of cattle which tenant those plains.

I never saw the *Gynerium* growing there, but I have seen other Grasses so high that a horse was standing hidden in them, and thistles which reached to a mounted horseman's shoulders.—W. K. W.

BENDS FOR HOT-WATER PIPES.

HAVING seen in your journal a communication, signed "ABEL NOTT," recommending the use of glazed bends in lieu of iron ones for hot-water pipes, I beg to say that any trial of the plan can but end in disappointment. In the first place there will be found a great difference in the expansion and contraction of the two substances, and at the socket end of the bend the expansion of the iron will cause the earthenware socket to split at the spigot end. The expansion of the iron socket will first break the joint and cause it to leak, and then will, by the contraction, crush the earthenware end. As for the joints of iron pipes not remaining sound, if they are made properly with *iron cement* they will stand for hundreds of years as sound as the day they were fixed; neither can the advantage be very great in the cost

of earthenware pipes, bends, &c., as I can fit and joint a four-inch iron pipe, including labour and materials, at 4s. 6d. per yard. Again, when the earthenware pipe is hot, the least drop of cold water spilled upon it is liable to crack it.—AN EXPERIMENTALIST.

[Our correspondent is quite right. Earthenware bends can only be used with earthenware pipes.—ED. C. G.]

SPRING BEDDING PLANT.

HAVING a large patch or two of the Golden Sedum (*Sedum acre aureum*), I took them up in October, potted them, and plunged them in the open ground. About the middle of February I turned them out on the beds occupied last summer with Verbenas, &c., and now (April 6th) the beds are one mass of the most beautiful gold colour. Being so hardy and easy of propagation I consider it one of the best spring bedding plants we possess. When I want the beds for annuals, Verbenas, &c., I shall throw it on the rock or any convenient corner; for, like its parent, it is not at all particular as to situation and soil. It will almost grow without.—G. T. F., Leek.

[What can your plant be? The little Stonecrop, *Sedum acre*, does not flower before the end of May.—ED. C. G.]

BOITE A HOUPPE.

THIS is a very simple yet effectual contrivance, introduced by Messrs. Burgess and Key, for the application of sulphur or lime to the Vine, trees, and all kinds of plants. Since it is now incontestably proved that the application of dry sulphur is so efficacious in curing the Vine mildew various modes have been introduced for its application. Of all these inventions none can be compared to the *Boîte à Houpe*, which is very easily used, allowing the operator one hand always at liberty to separate the leaves and uncover the parts which are to be sulphured, distributing the sulphur regularly in impalpable powder (which is indispensable in order to obtain a successful result), the other hand being used merely in shaking the box. Two or three applications only are necessary, namely, when the plant first begins to shoot; 2ndly, after the plant has blossomed, and, if necessary, when the fruit begins to ripen. There are many other uses to which this simple invention may be applied, such as the distribution of lime or any other like material. The apparatus has been used very extensively in France, where large quantities have been sold, and found to have produced most successful results.

An instrument like a pepper-box has been used for the same purpose; but it was found to distribute too freely, causing much waste. The advantage of the *Boîte à Houpe* is, that before distribution the material to be distributed passes through short lengths of wool: by this means it is distributed in almost imperceptible particles upon the plants, without the waste which takes place by the usual method.

NEW BOOKS.

REARING PHEASANTS.*—This is a well-timed and useful little book, and ought to be welcomed both by the amateur and game-keeper. Its purpose is told in its first sentence:—"Much money is often expended needlessly in making pheasantries, and as no one has yet attempted to put in print the proper way to avoid it, I have been induced to do so, being much encouraged therein by the success of a work of a similar character on poultry."

It is a thoroughly practical little pamphlet, and gives available directions not only how to rear common Pheasants, but also the Gold and Silver kinds, and how to manage them in the larder, and in packing them for market.

* *Pheasants and Pheasantries*. By John Baily. London: Simpkin and Marshall.

SUMMER LETTUCES ON DRY, LIGHT SOILS.

FEW things baffle the cultivator more than Lettuces in a dry season on a shallow, dry soil. When both these evils have to be contended against it is most difficult to produce a good Lettuce; but by a modification of the one—the other being beyond our power—and attending to some useful points, there is a probability of a successful result.

Dry, burning sands or gravels are especially unfitted for succulent summer vegetables like the Lettuce, the more so when the sandy or gravelly substratum is of a character obnoxious to vegetation, being often charged with some mineral substance of a deleterious nature, which it partly imparts to the surface soil when brought to the top, but which, nevertheless, is in time sweetened or otherwise rendered more agreeable to vegetation by exposure to the atmosphere. Stunted plants or weeds find a scanty subsistence upon it for a time, and eventually it becomes better adapted to tillage, but this is often the result of years; whereas the vegetable now before us requires a rich, moist soil, it being, in homely phrase, "a gross feeder." But those who wish to produce good Lettuces, and are willing to expend a little extra trouble in so doing, may effect their object by following out means something like the following:—

1. DEEPEN AND IMPROVE THE SOIL by removing a portion of the hungry substratum, and introducing clay, marl, or stiff loam of an opposite nature to that existing at top. Let this be mixed with the surface soil, and some good, well-rotted dung likewise. At the same time let there be a sufficient quantity of the original surface soil kept at the top to start the plants with; and although rough, clayey, or loamy lumps will not at once blend with loose, sandy soil, yet, by their being mixed with some sort of soil that is good, the roots will find their way downwards in this medium, and also cling around the lumps alluded to, which contain the much-wanted moisture, and the plants will thereby have a much larger scope of root room than when grown in the ordinary surface soil of the place.

2. SOW THE PLANTS WHERE THEY ARE TO REMAIN.—This must also be attended to, and in the hot, dry summer months a little shading with boughs, nets, or other things will be necessary to insure the germination of the seed. Shading is the more requisite if watering be resorted to, and, however homely the means made use of, anything is better than leaving the ground to be scorched up by the sun. In sowing, shallow drills about fifteen inches apart will be found best, and the seed ought to be sown thinly; but it is absolutely necessary to their well-doing to thin them liberally, and very early too; and if it be requisite to plant a few any way, let that be done when the plants are just sufficiently large to handle, as when older they are liable to run to seed.

3. APPLYING WATER.—This is a delicate affair, and is often productive of evil. Cold, hard, well water is at times bad, and when no other can be had let it stand some hours in the sun before using, in order to warm and soften it. Generally apply some guano, dung, or other manure, which will feed as well as refresh the plants it is administered to.

4. TIME FOR WATERING.—Some difference of opinion exists on this point; but I see no reason for departing from the old rule of doing it in the evening, except in those cases where a little haze or slight rain indicates that there will not be much fall. In that case watering may be applied with a certainty of its being at the most natural time. Regular waterings ought not to be given unless you have reason to believe the ground to be full of roots, and the plants thereby in much the artificial condition of potted ones. A good soaking in a dull, damp day will,

however, usually last several days, and ought to be adopted in preference to dribblings. It is also proper to observe that the manure water may be increased in strength as the plants grow, so that at last the doses may be tolerably strong; for, as I have before observed, this plant is a gross feeder, and, when grown in a situation like the one in question, is much the creature of artificial means, and must be fed accordingly.

It should be observed here that in soils of this class a judicious mode of deepening the tillage for each succeeding crop is attended with benefit; but where the substratum is of a healthy, though poor material, it would be as well to trench it two feet deep at once. Removing the stones some depth, and leaving the residue some twenty inches or more deep is attended with great benefit, and this depth being maintained by after tillage, healthy, good vegetables may be grown. Such soils often require replenishing with manure either in a solid or liquid form. Where manure is plentiful good crops may generally be had in ordinary summers, and in hard winters there is a great advantage attending such soils. Plants upon them stand the winter better, and slugs are less numerous here than in other soils.

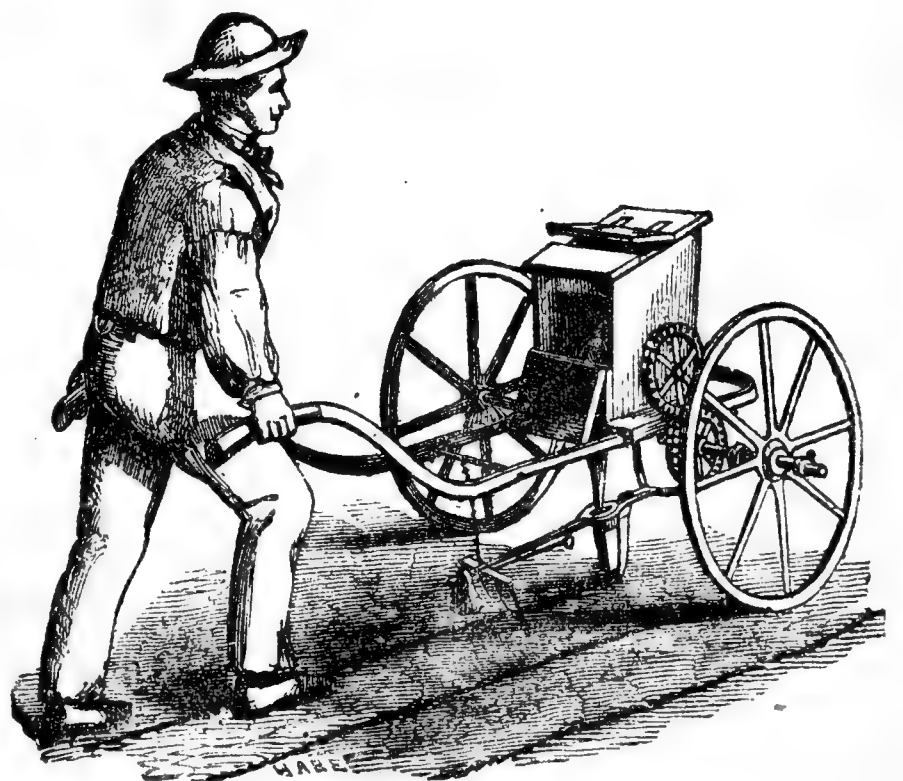
I ought, also, to have said, that in very hot seasons *Cabbage Lettuces* are less likely to run to seed than the more favourite *Cos* varieties. A few of both may be sown, and let these sowings be frequent, and be sure the seed is new, seedlings from old seed having a greater tendency to run than those from new seed. There are many good kinds of Cabbage Lettuce under the names of *Drumhead*, *Tennis Ball*, *Malta*, &c., all of more or less merit.

J. ROBSON.

IMPLEMENTS CONNECTED WITH THE GARDEN AND HOUSEHOLD EXHIBITED AT THE ROYAL AGRICULTURAL SOCIETY'S SHOW.

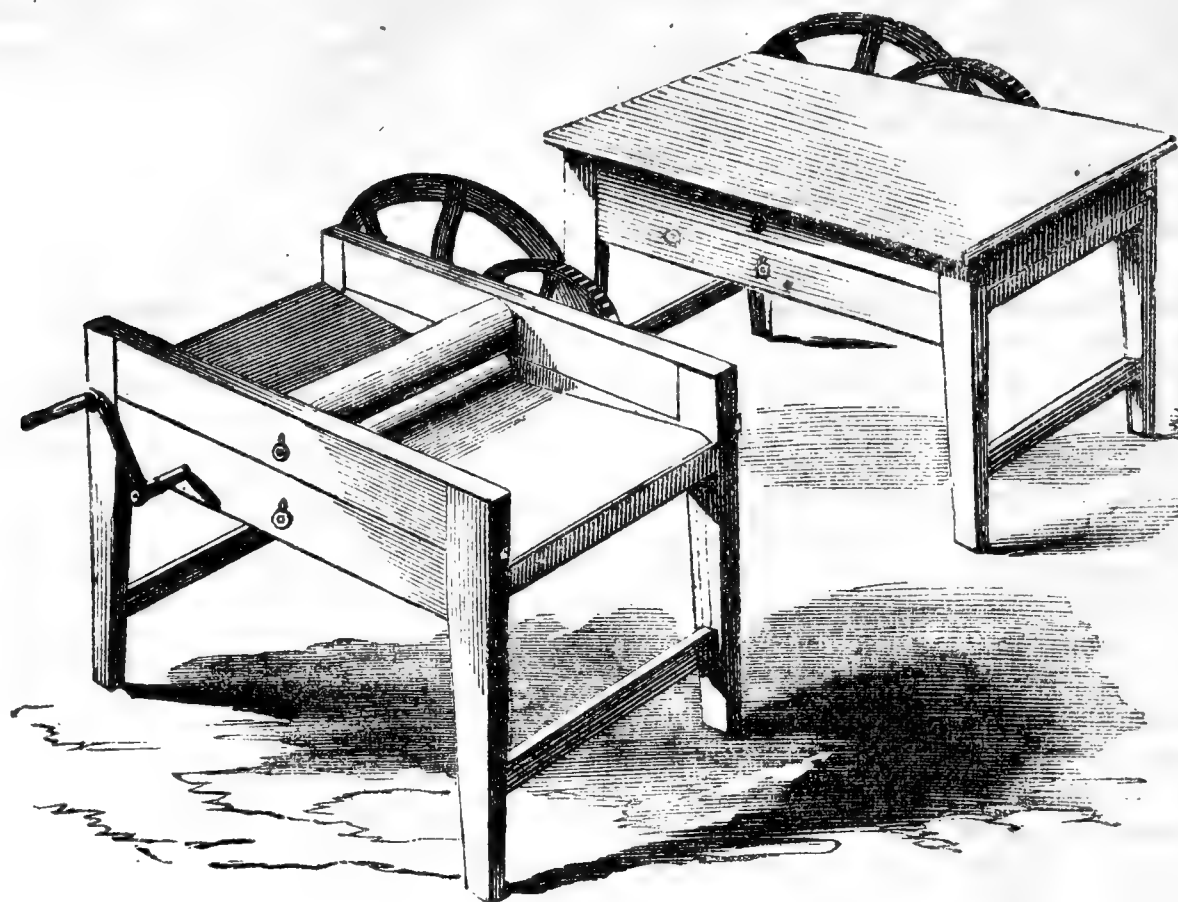
THE following were exhibited by Messrs. W. Dray and Co., of Swan Lane, Upper Thames Street. We may as well observe that many other implements were at the stands of these manufacturers, and at the stands of other manufacturers, besides those implements of which we publish drawings; but we only publish those which especially attracted our notice.

ONE-ROW GARDEN DRILL.



This is capable of being used for any kind of seed. There are also single-row drills for sowing small seeds, portable manures, &c.

MANGLE AND WRINGING MACHINE.



Two mangles are represented in the engraving; one open, and the other closed.

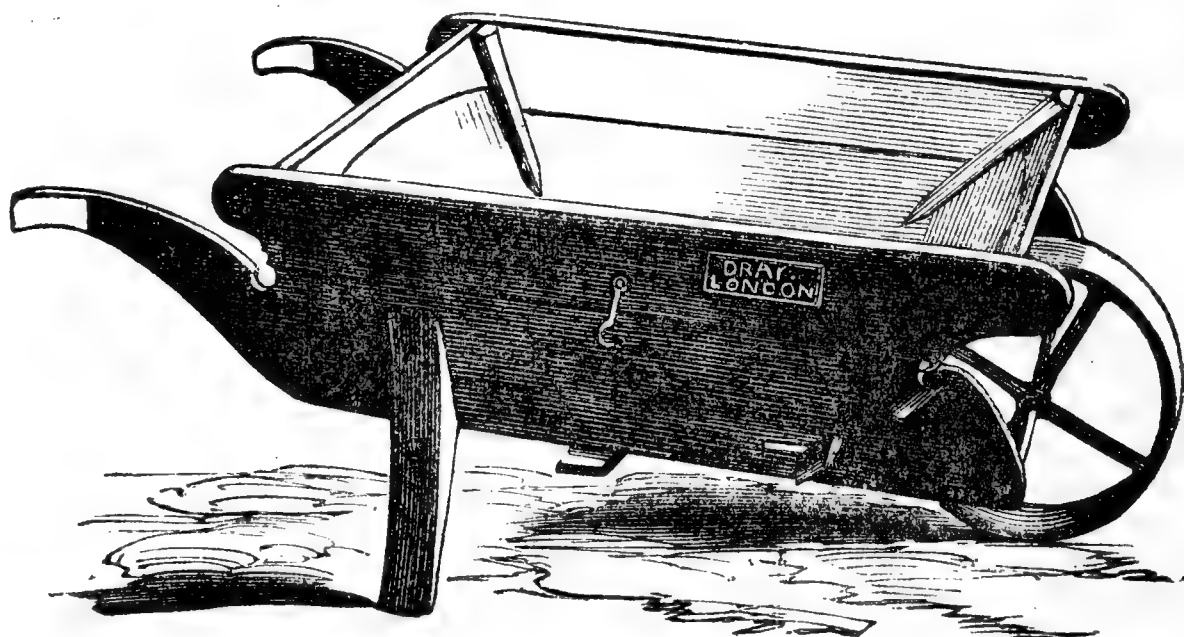
The mangle when closed forms an excellent ironing table.

Price £4 10 0

The great merit of this machine is, that from the peculiar manner in which the pressure is obtained it is

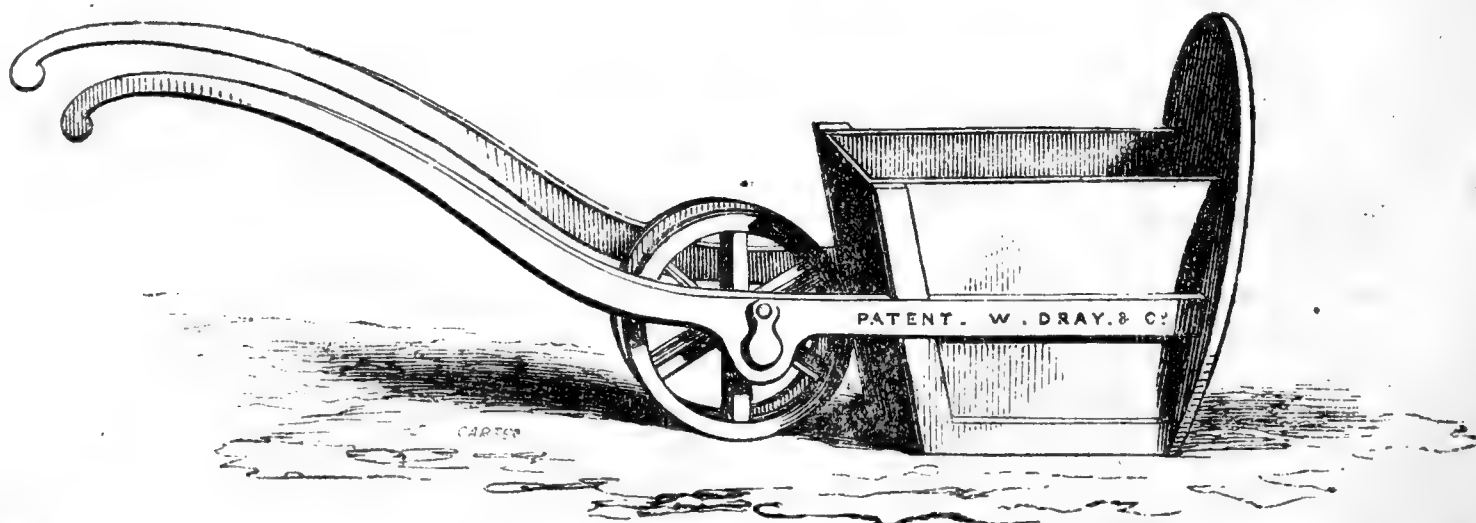
almost *impossible* for it to get out of order. Another important characteristic is, that the pressure being *self-regulating*, no amount of judgment is required in the use of it. The above-described is also an excellent wringing, or rather, squeezing machine. There is an opening under the rollers, through which the water squeezed from the cloths falls into a tub or other utensil placed beneath.

GARDEN WHEELBARROW.



This is very strong, runs lightly, and is fitted with a moveable tailboard.

FERASSIER'S PATENT GARDEN WHEELBARROW.



These barrows have two wheels, and are so constructed that the load placed upon them is made a means of propulsion. The man using one of them may thus convey an extraordinary quantity of goods at very great speed.

He has merely to bear down upon the handles, making his own weight act as a counterbalance, instead of having to lift and sustain the whole weight of the load as with ordinary barrows.

BLOOMING MAGNOLIAS.

LEE JORTIN, at page 449 of Vol. XVII., appears to require information relative to the distinguishing of blooming Magnolias. First, in point of practice, I assisted to pet, train, and coax a Magnolia against the south side of a parsonage house near Ludlow, Salop, for the term of sixteen years. It formed, certainly, a most handsome evergreen, though its growth was very slow, and its blooming was wonderfully less; for, during that period, not a single flower appeared upon it. From a hint I gathered from Mr. Pawlby, during a visit I made a few weeks since to the beautiful grounds of Mount Edgumbe, near Plymouth, I may possibly be enabled to solve a query for Lee Jortin *à propos* to the question, "How am I to distinguish the kind of Magnolia that intends to bloom?"

Amongst the noble evergreens in the pleasure grounds at Mount Edgumbe appeared some remarkably fine standard Magnolias, and amongst them I recognised the genus of my Shropshire friend, *Magnolia laurifolia*, as Mr. Pawlby called it, and he also named it the worst bloomer of its species, which accounted for my disappointment. I asked this question for future guidance: "What variety do you recommend as the freest and most certain to flower in the open air?" Mr. Pawlby replied, "*M. grandiflora*, and the true kind can be recognised by the perfect down of russet colour which covers the whole under surfaces of the leaves, in contradistinction to the *Exmouth M. grandiflora*, an inferior bloomer, which is often sold for it, but which can always be distinguished from the former by the under surfaces of the leaves being only partially covered with the russet on each side of their mid-ribs. The under surfaces of the leaves of *M. laurifolia* have not got a particle of rust upon them." Mr. Pawlby had, during a forty-seven-years' residence, propagated the plants, as well as most of those fine evergreen and deciduous trees which I saw around me.—UPWARDS AND ONWARDS.

QUEEN BEES AND ROYAL JELLY.

THERE is a very common belief that the larva of a queen bee is fed with a peculiar sort of food called royal jelly. This high-titled substance is noticed by most writers without the least reference to what it really is; and we think that, when Scharack discovered that bees would rear a queen from a "worker's grub," he believed that the change was in a great measure effected by that peculiar food.

Some years back we had a correspondence with Mr. Taylor on this subject, and denied that the change was effected by food, and, indeed, the royal jelly theory altogether. This elicited remarks from various correspondents; but we maintained our assertion on the simple ground that there are only two kinds of bees, male and female, and that the old notion that "working bees are neuters" was fabulous. Supposing even that it was not, the sex could not be changed by food; indeed, such an idea would lead to the erroneous doctrine of the transmigration of the species. Amongst the correspondents referred to was Mr. Golding, whose authority may be trusted, and we asked him what he thought of "royal jelly." He replied, "Fudge!" We need hardly say that this accorded with our own belief, from having often examined hives during the time that queen bees are reared without discovering any food differing from pollen or "bee bread."

Having stated that queens and working bees are of the same sex, we may observe that the first only differ in the more complete development of their growth when in the larva state in larger cells. Hence, when bees lose a queen, in order to rear another they have only to enlarge a cell containing a "worker's grub," and feed it with common food. But we have to note that such queens must be barren without the presence of drones or males.

We have had several proofs that bees have the power to rear a queen to supply the loss of another; but as this is hardly doubted, except as regards the difference in food already noticed, we trust that the following one may suffice:—Having deprived a late, weak hive of its queen, and carefully examined the combs which contained workers' larva, but no queen's cells, nor any begun, we confined the bees

two days, in order to prevent strange ones from attacking them before they settled. In about three weeks after they reared another queen like the one we destroyed. Her cell was an enlarged worker's one, and, of course, in a horizontal position, differing from the usual queens' cells, the mouths of which are downwards, and less elegant than all the other cells, however much has been said in their praise.

Connected with this subject we may give the following extract from a note which we had from Dr. Bevan. He says, "When adverting to your observations on royal cells I forgot to remark that I once had an excellent opportunity of observing one behind the window of one of my boxes. In that instance it was open at the bottom for several days, and had a complete lid formed by the circular end of the cell, which, remaining still attached to the main portion of it, was made use of by the workers like a lid hinged to an inverted tin can, with which, whenever the queen regent approached, which she often did, with a destructive purpose, the cell was quickly closed, and her majesty warned off. At other times it was open, suspended by its waxen hinge. During this period of her confinement the young princess was very sedulously attended, and, as I conceived, duly fed, though I could only witness the introduction of the workers' heads."

There are three things mentioned by this worthy apiarian which seem to require a little notice. One, the queen's cell being open at the bottom. He means the mouth of it, which is downwards, consequently the bottom is upwards. There is no notice how the lid of it was closed during the attacks by the old queen, but I suspect it was by the bees; and he does not say if the young one *called* when the old one tried to destroy her. I have heard one *pipe* during the attack; still that peculiar sound is often uttered by several young queens at once, the sound being high or low according to their ages.—J. WIGHTON.

NOTES FROM THE CONTINENT.—No. 2.

THE burial places of a foreign nation are always interesting to the traveller; so finding, when I was in Hamburg Botanic Garden, that I was within a few minutes' walk of the cemetery, I determined to see it. It is a large square piece of ground, without the slightest attempt at landscape gardening. There is a broad, straight walk across the middle of it, and narrower paths run parallel to it at short distances; these are united at either end by a walk running at right angles to them. There are avenues of trees to each walk, generally of Lime trees, so that in summer the whole place would be completely overshadowed. Each family appears to have a little piece of ground appropriated to themselves, and separated from the others by iron railing or low hedges of Privet. There are no raised graves, but each space is laid out with flower-beds, to which, it is evident, a good deal of attention is paid. There are, at present, many Roses, Rhododendrons, and other plants not quite hardy, carefully tied up in straw. There is not a statue, bust, or monumental pillar in the whole cemetery; here, as elsewhere, the people of Hamburg show that they are no patrons of the fine arts. There is no pompous eulogy of the virtues of the departed upon the tomb-stones, or black crosses which mark the individual graves; only the name, age, and generally a verse from Scripture; but every grave shows that the person buried there is fondly kept in remembrance, by the wreaths and chaplets of flowers which lay upon them. These wreaths are usually made of green moss, with a few dyed everlasting flowers (*Gnaphalium*), and streamers of white ribbon, but some of them are more costly; and I saw a few bouquets of forced flowers, such as Azaleas, Lilies of the Valley, Primulas, &c., which must have been placed there only a few hours before. On the humbler graves lay little bunches of Hepatica and Crocus flowers, with a few sprigs of Box or Ivy leaves tied round them. These flowers are merely laid upon the graves, or hung upon the crosses, and although the gates of the cemetery are constantly open, yet no one touches them. The sale of these bouquets and wreaths for the decoration of the graves of departed friends forms no inconsiderable part of the business of the florists of Hamburg.

The railway journey from Hamburg to Berlin is, perhaps, as uninteresting a trip as it is easy to find. The whole distance, 180 English miles, is over a flat, sandy plain, so level, indeed, that there is not a single tunnel, and scarcely any cuttings are to be seen. Those parts of the country which lie a little lower than the rest are swampy and covered with reeds; all the rest are dry and barren. This monotony is now and then broken by plantations of Birch or Fir; but there is little cultivation visible. The country is occasionally divided into large fields by bad hedges of Birch or Acacia (*Robinia pseudo-acacia*). There is nothing looking green, as there is in England even in the depth of winter, not even a Furze bush. Our common Brake Fern (*Pteris aquilina*) is nowhere to be seen; but the Heather is there, and large tracts look quite black with it.

The first impression that strikes every person visiting Berlin is that of wonder that so fine a city can have grown up in such a flat, barren, uninteresting country, and upon the banks of such a sluggish stream as the Spree. Most of the streets of Berlin are straight—one of them for three miles—and many are planted with avenues of trees. The street called "Unter den Linden" (literally, *under the Lime trees*) is generally admitted to be one of the finest in Europe; it has a double avenue of Limes through its whole length, which is about three quarters of a mile. Beneath the trees are stalls for the sale of flowers. The best bouquets, which are very tastefully made up, are kept under glass cases. There seems to be a brisk sale for little bunches of Violets, Crocus, and Cyclamen flowers, which are sold at three silver groschen a bunch (3½d. English money). It grieves me to have to record that the people of Berlin combine their love of flowers with that of gambling, and both with the breaking of the Sabbath. Every Sunday, I am told, there are lotteries for bouquets in several parts of the city. The tickets are a penny each; about one in every four persons is successful, and becomes the owner of a threepenny nosegay. It is composed of a few Primula flowers, a Violet or two, and a few sprigs of Box.—KARL.

STOCKING RIVERS WITH FISH.

THE following is extracted from a letter which has just appeared in the *Hereford Times*, and is signed "A BROTHER OF THE ANGLE:"—

"The only calculation we have of natural production is that one fish deposits spawn capable of producing 17,000; and, as it is supposed that out of this number 800 only in the natural state are left to germinate, and afterwards that few comparatively escape their aquatic and winged adversaries and arrive at maturity, the success of those who have achieved exemption from such heavy loss on natural production by artificial means cannot fail to create general interest; and it would seem that a new era is fast presenting itself to the lovers of the angle generally, it being far more practicable to secure and hatch the spawn of trout and greyling than that of salmon. As a humble disciple of Izaak Walton, I regret that this discovery has only been viewed in this country in a mercantile point of view, and that so little of his spirit is infused into those landed proprietors through whose estates flow beautiful trout and greyling streams, or surely we should see more progress in the art of replenishing those streams annually with thousands of these beautiful finny tribes, and thus repair the encroachment of vagabond poachers and netters of our best streams, who, when keepers are asleep (and keepers, like other men, must sometimes get forty winks), ruin the pleasure of the angler. It appears to me a strange want of interest in making provision for this sport that the return of profits and the increase of salmon only are all that we see discussed; whereas, if we review the origin of this valuable scientific mode of artificial culture, we find that it was brought to light merely by a poor fisherman on the banks of one of the French rivers, who, being unable to procure a subsistence from the unproductiveness of the fish therein, had recourse to the experiment of collecting the spawn, and preserving it in boxes in the river until hatched; and it must be borne in mind that in this river were no lordly salmon, but humble fry only, and that the Academy of Science in Paris

were so much struck by the intelligence of this humble fisherman as to reward his perseverance and discovery by an appointment as superintendent of a numerous force, through whose exertions not only have many of the most unproductive rivers in France teemed with living testimony of his success, but our own country and other parts of Europe have also participated in its beneficial results. It does, I repeat, appear extraordinary that no advocate has sprung up from the ranks of British anglers to speak forcibly in favour of trout and greyling propagation, and by their example to induce the general adoption of so easy and inexpensive a mode as merely the sawing a few of the orles which abound on the banks of all trout streams into inch boards, and forming boxes, which under water would last thirty or forty years, and, by placing strong wires of galvanised iron (also imperishable) on one side of the boxes, form a cage for depositing the spawn, into which no natural enemy could enter nor the floods injure, thus preserving it until hatched, and afterwards proving a safe asylum for the young fish to run into, similar to the everyday mode of preserving chickens from the ravages of the kite by placing them under a hen-coop."

This extract was inclosed in a letter, which says, "A BROTHER" does not mention the position that the boxes should occupy in the stream, though, I presume, the sides in which the galvanised wire is fixed should face contrariwise to the force of the current, and they should be well secured to the bed of the river by strong hooked pegs or other substitutes. But where it can be found feasible to adopt them it is worth a consideration whether or not the boxes would not prove best if formed bottomless, so as to allow the spawn to remain protected on the natural site and position in which it became deposited by the fish; and regarding the brisk-running waters which the trout delights to inhabit, I would recommend the spawn protectors to be made in the shape of a long-sided triangle, thus forming a cutwater and least resistance to the power of the current, and also being less liable to displacement from the pressure of those unfortuitous collections of atoms which are sure to form themselves against an opposing body in their course."—UPWARDS AND ONWARDS.

[We shall be obliged by any authentic information on this interesting subject.—ED. C. G.]

QUERIES AND ANSWERS.

TROPÆOLUM PENTAPHYLLUM FOR THE BACK OF A GREENHOUSE.

"The stage in my greenhouse is a flat one, three feet high, and is made of three-inch bars three quarters of an inch apart, extending along the back from end to end, with a straight footpath in front. Would a *Tropæolum pentaphyllum* be drawn too much were it planted in a bed beneath, and trained up wires along the wall, and through the spaces between the bars of the stage, and thence up the sashes?"—A.

[A strong root of *Tropæolum pentaphyllum* will give you satisfaction, and if your greenhouse is not kept hot it will bloom freely in summer and autumn. Most likely it will die back in winter; but it will come next spring stronger than before.]

VINE PRUNING AT FONTAINEBLEAU AND THOMERY.

"Your article from the *Horticultural Society's Journal* on the Vines of Fontainebleau and Thomery is interesting to all out-door Grape growers. There is, however, one paragraph which I cannot understand, and I should feel obliged if you would give me an explanation. I allude to that on the pruning. Are all the Vines kept at the winter pruning in the state of Vine A? If so, do the upright branches grow from the single eyes, and bear fruit to the extent of eighteen inches (the eyes at the base of a stem will not throw fruit in this country)? or are the upright branches kept at the winter pruning to bear fruit

during the following year? In this case, where are the branches trained during their year of growth? and, if stopped at eighteen inches, how do they prevent the fruit-buds from breaking? It may be that the natural power of the sun at Thomery will enable a Vine to do what can only be done in this country by artificial heat, and that even the gentlemen of the walking-stick school could there obtain fruit on the open walls; but this is exactly what I wish to know, and your explanation will be most thankfully received."—H. S. WATSON.

[At Thomery the shoots of the Vine which have borne fruit are cut back to within one or two eyes of the horizontal branch, as represented in the Vine A. In summer the best young shoot of those resulting from the eyes left at the winter pruning is allowed to grow upright till it reaches the next horizontal course, and it is then stopped by pinching. One or two laterals usually push; they are pinched back to two eyes, and from these laterals will push before any of the principal eyes break. You will find that in this country perpendicular shoots from horizontal branches will bear well, and the fruit will ripen better than it would by any other mode of training.]

TREATMENT OF NEWLY-BUDDED ROSES.

"Last autumn I budded a good many Roses of various kinds on the wild stock. They are now pushing vigorously, and I wish for information as to their treatment.

"I see that all good standards got from the nurseryman have at least two branches from each eye inserted in the stock. How is this obtained? Should they be pinched back while they are young?"—W.

[Standard Roses are twice budded to give two chances of success, and two small heads on one stock look bigger than one head. Buyers who do not know better like to have plenty for their money, therefore the two buds are allowed to make two heads as one on a stock, which is the very worst practice of the present age. Always cut away the weakest of the two as soon as you are sure of a "take." But you are not out of the wood yet; your greatest trial is before you. If there is nothing to tie the new shoots to as soon as they are a few inches long away they go with the first high wind. Every standard Rose which was budded last autumn ought to have had the new shoot stopped by nipping off the top bud as soon as it was six inches long, and no sooner; and every stone-fruit tree, as Apricot, Peach, Plum, and Cherry, if it is to be trained, ought to be done exactly as the Rose. To allow a Rose or Peach to grow on one whole season from the bud without stopping for trainage is one of the most injurious practices, and is forced on nurserymen by the ignorance of their customers.]

SCARLET PASSION-FLOWERS.

"A week or two since I ordered of a Gloucester florist a scarlet Passion-Flower, and he has sent me one labelled *Passiflora Loudoni*, and on referring to THE COTTAGE GARDENERS' DICTIONARY (last edition, 1857) I find the colour of the flower given as purple. Still the gardener who sold it persists that it is, if not quite scarlet, of a very bright pink or red colour, and certainly not purple. Will you kindly tell me what is the colour of *Passiflora Loudoni*, as I have always regarded THE COTTAGE GARDENERS' DICTIONARY as law in these matters? I have since bought a plant of another man as a scarlet Passion-Flower, who has sent me a plant labelled *Passiflora Guyion*. It is a fine healthy-looking plant; but I should like to be assured that the colour of the blossoms, if I should ever succeed in obtaining any, will be scarlet, and I see no such name in THE COTTAGE GARDENERS' DICTIONARY."—C. WEBB SMITH.

[*Passiflora racemosa* is the only real scarlet we know of. *Loudoni* is a cross seedling between the crimson *kermesina* and an old purple cross from *cærulea* by the pollen of *racemosa*; but there is more crimson than purple in it, and those who cannot distinguish crimson from scarlet call *Loudoni* a scarlet flower. Its true colour is a purplish crimson. It is a splendid thing; so is *kermesina*, but *racemosa* is brighter than either, and than all other Passion-Flowers. We do not know *Guyion*.]

CAMPANULA PYRAMIDALIS, LILIUM GIGANTEUM, AND TALL LOBELIAS AS BEDDING PLANTS.

ONE of the oldest flower-garden plants we have, and the one which gardeners of the last generation took the greatest pride in preparing to "blow" out in the borders, is *Campanula pyramidalis*, blue and white. But, previously to that, this pyramidal Bell-flower was grown to "adorn halls, and to place before chimneys in the summer when it is in flower, for which purpose there is no plant more proper; for when the roots are strong they will send out four or five stalks, which will rise as many feet high—yea, eight or nine stalks, which rise as many feet high—and are garnished with flowers great part of their length. When the flowers begin to open the pots are removed into the rooms, where, being shaded from the sun and kept from the rain, the flowers will continue (two months) long in beauty, and if the pots are every night removed into a more airy situation, but not exposed to heavy rains, the flowers will be fairer, and continue much longer in beauty." Thus wrote Philip Miller, "Prince of Gardeners;" but the italics are mine, to mark more especially the estimation in which Miller held night air for his plants and flowers—a most essential step in the progress of cultivation, which half the gardening world of the present age have yet overlooked. But without "learning the steps" a man might as well pretend to be a soldier, or a woman to whirl in a polka, as for a gardener to believe himself "capable of all the branches" of the craft without taking the influence of the night air into the account.

The next oldest of the best old plants, which required the skill of an age to "bring out" into the open flower border, was not known to Philip Miller when he wrote that paragraph. *Lobelia fulgens* was not then introduced, and none of the Philip Millers of the present day have yet associated the *gigantic Lily of India* as a fit and proper subject for the flower borders, requiring much the same kind of treatment for that purpose as the *Lobelia fulgens*, *splendens*, and *cardinalis*, when it is to be raised like them from side-suckers of the old stool, or very much like the *Campanula* aforesaid when it is to be had from seeds.

When the gardening world was not so fast as it is in our day, and when the gardener had time to do things as they should be done, the fact was well known that seedling plants of these favourites were much better than plants from suckers. "The plants of *Campanula* which are raised from seed are always stronger, and the stalks will rise higher, and produce a greater number of flowers." Since those days, however, the art of cultivation has so much improved that suckers and root cuttings of this *Campanula*, and suckers only of the scarlet *Lobelias*, can be made to bloom as stately as any seedling plants of the same kinds were ever known to do; and so it is, and will still more prove to be, with the half-hardy *Lilium giganteum* of India. Content yourself with suckers from it as from the scarlet *Lobelias*, and treat them both exactly alike from October to next June, and the one will flower out of doors in the common border just as well as the other, and both of them equally so with the tall *Campanulas*—not, however, if our gardeners are doomed to be for ever bedridden with *Tom Thumbs*, and creatures of "that there sort." Yes, October is the right time of the year to begin to make specimen plants of *Fuchsias*, seedling herbaceous *Calceolarias*, scarlet *Lobelias*, pyramidal and several other tall *Campanulas*, and many others, as well as of the *gigantic Lily*. To have given up the *Campanulas* for the conservatory may well be excused; but to put all the old stools of *Lobelias* into rest for the winter is not the proper way

to get the Lobelias ten feet high in the conservatory. I had them so high when I was much higher in my own estimation, and those who took the heights are alive to this day—one of the Messrs. Dickson, of Chester, and the elder branch of the firm of H. Low and Co., of Clapton. But to put stools of this Lily to rest in October and November is a still less wise "piece of business;" and the temperature in which suckers of this Lily are wintered depends, or ought to depend, on where the plants are intended to bloom. I am now writing on their treatment as border flowers to be grown in a superior manner, or like scarlet Lobelias, from four to five feet high, and both to come into flower together, after being planted out of good-sized pots early in June, or earlier if May was very favourable planting-out weather. But to put them in at the shortest notice, all that seems necessary to say is this—if you are going to grow the *Lilium giganteum* from seeds treat the seeds and seedlings as you would those of *Campanula pyramidalis* the whole way through till they bloom; or, if you take nursery plants of it, which is the more likely, treat them in every respect as you would an established or rooted sucker of *Lobelia fulgens*; that is, at the present moment.

But of all the natives of the earth who knows best how to treat the said *Campanula* from seeds? The natives at the Clapton Nursery discovered the right way to raise this Lily in cold frames from seeds sown in October or some time late in the autumn, as you were told this time last year; and in the olden times that was just the way to "do" the *Campanula*. "Sow in the autumn in pots or boxes filled with light, undunged earth, and placed in the open air till the frost or hard rains come on, when they should be placed under a hotbed frame, *alias* a cold pit, where they may be sheltered from both; but in mild weather the glasses should be drawn off every fine day, that they may enjoy the free air. With this management the plants will come up early in the spring." The seedlings of *Lilium giganteum* thus treated during the winter of 1855 and 1856 came up this time last year, and kept in leaf till last September in the Clapton Nursery; but let us pursue the parallel. The seedling *Campanulas* are up in the spring, "and then they must be removed out of the frame, placing them first in a warm situation; but when the season comes warm they should be removed where they have the morning sun only. In September the leaves of the plants (*Campanulas*) will begin to decay, at which time they should be transplanted." Now, supposing the *Liliums* to have been "in pots or boxes" last September, that was the time to have them transplanted for the first time, or say at the end of twelve months from the sowing of the seeds, just like the *Campanula* seedlings.

But hear the shifts and contrivances for want of a "cold bed" in a cold pit. "Therefore there must be one or two beds prepared in proportion to the number of plants. These beds must be in a warm situation, and the earth light, sandy, and without any mixture of dung, which last is an enemy to this plant, and also to seedling *Liliums*. If the situation of the place is low, or the natural soil moist, the beds must be raised five or six inches above the level of the ground, and the natural soil removed a foot and a half deep (*hear*), putting lime rubbish or stones eight or nine inches thick at the bottom of the trench to drain off the moisture (*hear, hear*). When the beds are prepared the plants must be taken out of the pots or cases very carefully, so as not to break or bruise their roots, for they are very tender, and on being broken the milky juice will flow out plentifully, which will greatly weaken them. These should be planted at about six inches apart every way, with the head or crown of the roots half an inch below the surface. If there happens

a gentle shower of rain soon after these are planted it will be of great service to the plants; but, as the season sometimes proves very dry at this time of the year, so, in that case, it will be proper to give them a gentle watering three or four days after they are planted (*hear*), and to cover the beds with mats every day to prevent the sun drying the earth; but these must be taken off in the evening, that the dew may fall on the ground. Towards the end of November the beds should be covered over with some old tanners' bark to keep out the frost; and where there is not convenience of covering them with frames they should be arched over with hoops, that in severe frost they may be covered with mats, for these plants, when young, are often destroyed in winter where this care is wanting. In the spring the covering must be removed, and in the following summer the plants must be kept clean from weeds. In the following autumn the ground must be stirred between the plants, and some fresh earth spread over the beds, and in the winter covered as before. In these beds the plants may remain two years, during which time the plants must be treated in the manner before directed, by which time the roots will be strong enough to flower; so in September they should be carefully taken up, and the strongest potted." Then the rest to be transplanted wider apart, and to be kept from frost and weeds as before. "With this management these plants may be brought to the utmost perfection, and a constant succession of good roots raised, which will be much preferable to those which are propagated by offsets."

Every word of this excellent "management," as given by Miller, refers equally to the seedlings of *Lilium giganteum*, only that they will take a longer time to get to a flowering age. And now to their treatment from offsets or suckers. This is the same as for offsets of the scarlet Lobelias. They should be taken off and potted in the autumn, any time in October, in equal parts of sandy loam, leaf mould, and peat; large 60's are the right-sized pots for small offsets, and for very large strong "sets" 48-sized pots will be necessary. The pots should then be plunged into a very moderate hotbed, to be kept at 55° till the middle or end of January, when they will require another shift, and after that about 60° of heat, with abundance of air, and a large amount of water at the roots. The same heat will do during the spring for plants which are intended to flower out of doors; but they ought to get a fresh shift once a month or six weeks, and those that are to flower in the conservatory may have more heat after the middle of March—65° to 75°, according to the weather, will suit them to a nicety—that is, both the Lilies and the Lobelias, and no one can have too many of either if he or she has room for them. A second best is to rest the stools of both from October to the end of January, and then divide the offsets, pot, plunge, and regulate as before.

To increase the stock of the gigantic Lily faster than the natural way (for it is like the scarlet Lobelias in that respect, the same plant never flowering but once), I say, to increase it at a gallop, break off the flower-stems of some of the plants when they are six or eight inches above the pot, and that will cause every hidden bud about the neck of the plant to grow into an "offset," which will make a good plant by next year. If you also break off the flowering stem of the strongest Lobelias when they are from a foot to fifteen inches long, the bottom part will throw up ever so many side-flowering shoots, which, if you thin them to four, five, or six, according to the strength of the bottom, every one of them will be as good a flowering shoot out of doors as you see the principal shoots of nine-tenths of those that are grown now-a-days; but the truth is, no one grows them now to one quarter of what they might be brought to if they were begun in October. When they are left at rest till the spring they necessarily grow

ahead faster, or at least as fast as they can multiply their roots, and when that is the case with them, or with most plants, the bloom is not what it should be, nor anything approaching to it.

What a bed, thus—one gigantic Lily in the centre; five more of it round that one; then a close row of *Campanula pyramidalis*, with the first centre flower-stalk broken off at eighteen inches high, and each plant carrying five strong flower-stalks in place of one; then three rows of *prepared* scarlet Lobelias in front of that; and the last row of young *Agapanthus umbellatus*, or blue African Lily—why, it would be a good “fortune” for a princess of the royal blood! There is no more gardening difficulty about the plan than there is about putting the Horticultural Society on its legs again. Money, and go the right way to work, “that is the thing.” Kill three birds with one throw, or grow three plants, as here set forth, in one bed, and you will be a fit and proper person to put up as a candidate for the F.H.S. and the ivory ticket, which, by-the-by, is as good a ticket for saving a penny as any three letters in the alphabet.

D. BEATON.

TO CORRESPONDENTS.

FLOWER-GARDEN PLAN (J. J. B.).—Your flower garden is particularly well-planned. Your corner beds are the best we have seen for years. They are very much more to our taste than the corner beds on the terrace of the Crystal Palace garden; but Loudon had a better style than yours for the outline of the inner side of the corner beds. We never plant gardens for others, but if yours were ours we would plant it for our own eye thus:—1, yellow *Calceolaria*, and 4 ditto—that is cross-corner planting; then 2 and 3 with scarlet *Geraniums*. The reason for 1 being yellow instead of 2 is, that yellow is easier to look at against the sun than scarlet. The drawing-room window is the place to arrange the colours from. 5, 6, 7, 8 to be of no distinct or strong colour—white, blue, lilac, variegated, or mixed kinds; and 6, 7, 8 may be of taller plants than those in the corner beds, but 5 should be a low bed. 9 the best purple *Petunia*, and 10 *Petunia Shrubland Rose*, or whichever is the best of its type. *Countess of Ellesmere* is not so good for a bed in many places, or rather, soils; and we have not seen a bed yet of *Marquis de la Ferte*: until we do we must hold the *Shrubland Rose* as the best bedding rose *Petunia*. 15, *Salvia patens* in the centre, and three rows of variegated *Geraniums* round it; and 11, 12, 13, 14 as you like them, in *Verbenas*—two or four distinct kinds or mixed—or any other kinds of low bedders.

LILIUM GIGANTEUM (J. H.).—See what Mr. Beaton says to-day about growing this “Giant Lily of India.”

MAKING AN ASPARAGUS BED. (A Young Beginner).—Trench the ground three feet deep, mixing well-rotted stable dung throughout; make the bed three feet and a half wide, and have only two rows of plants, eighteen inches apart, and consequently one foot from the side of the bed. In the row let the plants be one foot apart. Plant now, and use three-year-old plants. Seaweed will be a good manure for the bed. Sea sand may be mixed with the soil when making the bed if the soil is heavy. Either *London Market* or *Atkinson's Matchless* is a good Cabbage for present sowing. Buy “Kitchen Gardening for the Many.” It will save you more than its cost of fourpence.

MAGNOLIA NOT BLOOMING (L. J.).—See what “UPWARDS AND ONWARDS” says to-day about the *Magnolias* at Mount Edgecumbe.

NAME OF FERN (A Constant Reader).—Your Fern, found “on an east wall ten miles from London,” is *Asplenium viride*, not a common Fern, and not often found so far south.

NAMES OF ORCHIDS. (W. C.).—We have very often warned our correspondents that in sending plants, or parts of plants, to be named they ought to pack them in damp, not wet, moss, in a tin case, so that they (the specimens) may come fresh, and uninjured by the stamping-iron of the post office. Your flowers arrived in the worst possible condition, so that even with your description we are not able with any certainty to name them. However, we have done our best for you. 1. Is *Lycaste aromatica*. 2. You say you have for an *Epidendrum*. We never before heard of an *Epidendrum* with leaves fifteen inches long, and three inches broad. As far as we could make it out it appears to be a species of *Tricopelia*. When it flowers again we should be obliged by a perfect flower and leaf. It appears to be a handsome species. 3. Is *Epidendrum lividum*, not worth cultivation except for botanical purposes.

GREEN FLY (H. S.).—Flowers of sulphur dusted on these insects will not kill them. Very dry Scotch snuff might be applied by Epps's sulphurator without injuring the instrument.

RAMPIONS (An Old Subscriber).—It is a very bad practice sowing this vegetable in pans, and then transplanting the seedlings. Trench a rich piece of ground immediately, turning in a little rotten stable manure with the bottom spit. A rich, shady border is best. Sow in drills six inches apart. Thin the seedlings to the same distance in the rows. Give frequent waterings, for they require much moisture.

WRITING ON ZINC LABELS (A Zealous Subscriber).—Scrub them bright with coarse sand-paper, and write on them immediately, by the aid of a quill pen, with the following ink:—1 drachm of powdered ver-

digris (acetate of copper); 1 drachm of powdered sal ammoniac (muriate of ammonia); $\frac{1}{2}$ drachm of lamp black; 10 drachms of water. Mix them together in a two-ounce phial, and shake it every time before using. It is ready for use as soon as the verdigris and sal ammoniac are dissolved.

CAPSICUM PODS FOR DESTROYING GREEN FLY (*Nicotiana*).—You cannot use too much of them; their fumes are harmless to the plants. Roll up a little tobacco in the paper with them. Tobacco paper is of very uncertain strength.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JUNE 3rd, 4th, and 5th. BATH AND WEST OF ENGLAND. Sec., Mr. John Kingsbury, 10, Hammet Street, Taunton. Entries close the 1st of May.

JULY 8th, 9th, and 10th, 1857. LEAMINGTON. Sec., Thomas Grove.

JULY 9th. PRESCOT. Sec., J. F. Ollard.

AUGUST 8th, 10th, 11th, and 12th. CRYSTAL PALACE. Sec., W. Houghton.

SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.

OCTOBER 1st and 2nd. WORCESTER.

DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.

JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.

JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.

N.B.—Secretaries will oblige us by sending early copies of their lists.

SINGULAR RESULTS OF A CROSS BETWEEN GOLDEN-PENCILLED & GOLDEN-SPANGLED HAMBURGHS.

ALTHOUGH from my earliest recollection passionately fond of poultry, continuing the pursuit long before “fashion” made poultry breeding popular, and testing the varied advantages not only of purely-bred fowls, but likewise numerous crosses of all the general varieties, I never met with so singular a flock of fowls as the other day at the house of an old friend and acquaintance. My chief, indeed, my only reason for now writing, however, is because the result of the present experiment is diametrically opposed to my own previous attempts, both as regards the general appearances of the birds themselves, and also the habits of either variety of the parent fowls. The whole stock consists of some two or three hatches, produced about last Midsummer, numbering nearly a score specimens. The originals were very superior birds of their respective varieties, and, judging from the stocks from which both kinds were descended, I truly believe were as unstained by admixture with other descriptions of poultry as could be desired. I may as well say, although myself consulted in the purchases of the brood-stock, not the slightest hint ever escaped my friend's lips as to the trial he intended. The male bird was a perfectly white ear-lobed, well bronzed-tailed, Golden-pencilled *Hamburgh*; the four hens were very superior Golden-spangled *Hamburghs* (Mooneys), also possessing as faultless ground colour and white ears as could be desired. The four pullets had never been running with any male fowl whatever until mated by my friend. They were reconciled almost immediately, and laid somewhat profusely; but of course, as “non-sitters,” foster-mothers were procured for the incubation of the eggs. The chickens produced were unusually strong ones, and “were easily reared,” and, being now perfectly adult, are evidence of such an unlooked-for peculiarity, that I am anxious to know whether any other amateur has ever tested them with the same result, an attempt of my own, many years past, ending quite to the contrary of the present trial, combined with extreme irregularity of plumage. All the pullets of last summer cross-breeds are now either laying, sitting, or carefully attending young broods; nay, to my astonishment, they seem unusually attentive to their progeny. The owner jocosely remarked to me, “Two negatives make an affirmative; so I thought I should like to try whether two non-sitting varieties might not produce me steady hatching machines.” However incredible, still certain it is he has effected this result, whether anticipated on his part or otherwise. I do not wish to see hens more steady to their nests than they are.

Next, as to plumage and character generally, any poultry breeder could not be mistaken as to their being *Hamburghs*—

even a first glance carries conviction; still they so singularly resemble each other, yet of no acknowledged variety, that few would accredit they were a "cross," particularly as "not a single outcast had been weeded from them." They are most closely resembling in form "pencilled" birds, but larger and somewhat more stoutly built; the combs are well formed but heavy; the ear-lobes, in all instances, extremely large and quite florid, without even a stain of white, thus proving that the unusual excellence of *both* parents was *not* perpetuated in this respect. The cocks have clear, dark golden hackles and saddles, the sickle feathers alone being the same colour; the remainder of the principal feathers of the tail, and also all the *side-coverts*, are lustrous black. The breasts of the males are "laced," as in Sebright Bantams, not pencilled, but by far more heavily; even the thighs are similarly marked.

In the hens the backs are "mooned" very nearly as well as most exhibition birds, but the neck hackles are clear, ruddy gold, without *any* lists or markings whatever; the breasts laced, as in the cocks. It is the "regularity" of all the fowls that surprises me as to contour, colour, and feather. I do not for a moment myself suppose this will prove a permanent variety, but will, on the contrary, "breed out" again to a tolerable resemblance to one side or other of the parent fowls. Their sitting propensities are likewise quite a novelty, and certainly at once negative all precalculations as to probability. Still, as they now appear (the parent fowls having never run with them, but removed altogether from the walk), there is much to commend them to the eye in absolute beauty of feather; in utility, as producing eggs abundantly; whilst sitting their own eggs, and afterwards raising their own young, is manifestly advantageous.—EDWARD HEWITT, *Eden Cottage, Sparkbrook, Birmingham*.

BLACK EAST INDIAN DUCKS.

I HAVE resided in Buenos Ayres nearly twenty years. I had always a fancy for poultry, and kept every variety known in that country. The only domestic duck in the country is the common large White Muscovy, and none other, and these will not go into the water. I beg to assure you that those birds called Buenos Ayres ducks, and which I have seen exhibited in Birmingham, Liverpool, and Preston, are decidedly not Buenos Ayres ducks.

I am quite of opinion that they are the Black East Indian ducks. A neighbour has some exactly the same as those shown as Buenos Ayres ducks, but his came direct from India.

If I can afford any further information on the subject command—W. B., *Liverpool*.

TO PREVENT LICE IN CHICKENS.

As the time is coming when we are preparing for young chicks, I take this opportunity to state that, for the purpose of preventing their being afflicted with lice, you must put plenty of wood ashes among the hay or straw that you sit your hens on. If you do this you will never be tormented with that pest, and your hen will not spoil her feathers by picking and pulling herself.—JOSHUA OLDHAM, *Hyde*.

CHARACTERISTICS OF BELGIAN CANARIES.

AN article appeared in your number of the 17th ult. on the "Characteristics of superior Canaries," from a correspondent signing himself "A FANCIER." Though I agree with the descriptions there given as far as they go, yet the properties of the Belgian birds are not sufficiently detailed to serve as a guide to connoisseurs, breeders, or the uninitiated purchasers of those elegant pets. I therefore solicit a space in your columns to elucidate more fully what are the most essential requisites for birds of this class, and the commonest defects to be guarded against in purchasing from dealers.

STANDARD PROPERTIES OF BELGIAN CANARIES.

1. *Beak* slender and clear.
2. *Head* small and flat.
3. *Neck* long and slender.
4. *Shoulders* high, narrow across, and well filled,

5. *Back* curving convexly and well filled; that is, *not hollow*.

6. *Wings* long, narrow, compact, thin, and lying close to the body; the first two arms of the wings from the shoulder joints lying close to the posterior margins of the ribs, on a level with the posterior borders of the shoulder-blades and the spine; the points of the pinion joints jutting towards the neck, thus giving the appearance of a square finish to the shoulders, vulture-like.

The inner borders of the flight feathers should meet evenly on the loins, their points coming well down to the tail, but not crossing each other when in easy position on the perch.

7. *Chest*. There are *two* characters of chest.

The first is *circular*, such an one as would slip through, and at the fore part accurately fit, a large-sized wedding ring.

The second is somewhat *levelled* on its anterior under surface to a shape much like the breastplate of an ancient English warrior.

8. *Body* long, very slender, and tapering *regularly* from front of breast to vent.

9. *Tail* long, narrow, thin, even (that is, not spreading or fish-tail-like at the extremity, but the twelve feathers wrapped together as one feather only, "piped"), and curving in continuous circle with the back.

10. *Legs and thighs* very long, and perpendicular in stand.

11. *Feet* long, and *claws* slender.

12. *Feathers* close, compact, hard, or firm, and entire.

13. *Colours* rich, even, and regular.

14. *Attitude*. Head, spine, and tail curving towards a circle. Legs and thighs perpendicular, or slightly flexed forward; beyond that, at the knee joint, as the bird stands up, the points of the pinions and legs should be nearly on a line; so also should be the tip of the beak and tail (as the points of a first-quarter moon).

15. *Best birds*. Those having all or most of the foregoing properties best developed as a combined whole, and are the *greatest length*, which should not be less than six inches from tip of beak to tip of tail, and which have, in addition, a *voice* full, clear, and melodious, the males having an extensive range of notes, and being well educated in song.

ADVERSE PROPERTIES.

No good, healthy, vigorous Belgian Canary should have loose or uncompact feather, nor have scarcity of feather, nor have a large or high round head, nor have a short or thick neck, nor be hollow between the shoulders or on the back, nor be straight in back and tail, nor be thick or short in body, nor be wide across the shoulders, nor have lowering wings nor spreading tail, nor have short legs or thighs, nor have legs flexed backwards, as our small English birds of the Finch tribe.

The plumage of clear birds should be either of a good clear buff or a deep orange colour, and not have a single feather, however small, foul or discoloured, nor have had any either large or small feathers plucked, nor the tips of any clipped off. It requires nice examination to detect those barbering tricks which are frequently practised on the unwary by bird dealers.

The bird should not pant in its breathing, nor have a husky cough, nor have a discharge from the nostrils or mouth, nor have a whining moan as if in pain, nor bristle up its feathers languidly, and have a disposition to keep the head tucked under the wing during the day.

These last are symptoms of disease, and purchasers should always carefully avoid birds having them.—JOHN VARLEY, *Nottingham*.

ANSWER TO THE "INDIGNANT DORKING."

MRS. DORKING, I am delighted at being able to answer the numerous assertions you made against our race. I must repeat, and in this I am supported by "A WILTSHIRE POULTRY-KEEPER," that our appetites are not *nearly* so large as yours, and our eggs are as large in proportion to our size as those laid by Dorking hens. If we are subject to humped backs, let me ask, Who are liable to have crooked *breasts*? Look in the glass, Mrs. Dorking, and answer this question, and learn that those "who live in glass houses should not throw stones." I must stand up for myself and five of my

companions; there are no finer figures in the whole yard. I cannot say so much for my sixth companion, but she is equally good for laying, and, like the rest of us, enjoys excellent health and spirits. I did not say we were strong before we were grown up; but let me tell you that in ten months out of a party of twelve we had only two cases of sickness, both of which recovered; and in the last four months, when our number has been reduced to seven in consequence of five having been asked out to dinner and never having returned home, there has not been one case of illness.

The "WILTSHIRE POULTRY-KEEPER" fully justified the good opinion we have of ourselves, though he does not agree in what I said about exercise. We have the power of rambling most days, but we like home best, and think our mistress very tiresome when she drives us out. Perhaps, Mrs. Dorking, you have not got such a clean house as we have, and therefore you like gadding about instead of staying at home. I did not presume to say we could occupy as much space as *you* do at the dinner table, but we are larger than the Hamburgs. We are not ashamed of our black legs, as they are a mark of being true bred. I repeat we require care when young, but we amply repay it when we are grown up. Good-bye, Mrs. Dorking.—THE CACKLE OF A BLACK POLISH HEN.

CRYSTAL PALACE POULTRY SHOW.

THIS, as will have been seen in the advertisement, is to be held on the 8th, 10th, 11th, and 12th of August. As far as the Poultry is concerned it is exclusively a Chicken Show, for the 2nd Rule is this:—

"II. *The Poultry must be the produce of 1857. The Pigeons and Rabbits may be of any age.*"

This rendered desirable a special provision relative to the Game classes, and it is stated, therefore, that,—

"*Seeing the early period at which the Show is held, it will not be imperative that the Game chickens should be dubbed.*"

Exhibitors will also do well to take heed to the 8th Rule, which provides that—

"*No alteration can be made in the prices of the specimens during the Exhibition.*"

Therefore, though a pen obtains a first prize, it must be sold at the price originally attached to it, however low that price may be. We wish that no sales were permitted before the middle of the first day. Neither the Judges nor any one else should have any advantage over the paying public.

Silver Cups and Medals may be had instead of money prizes if preferred.

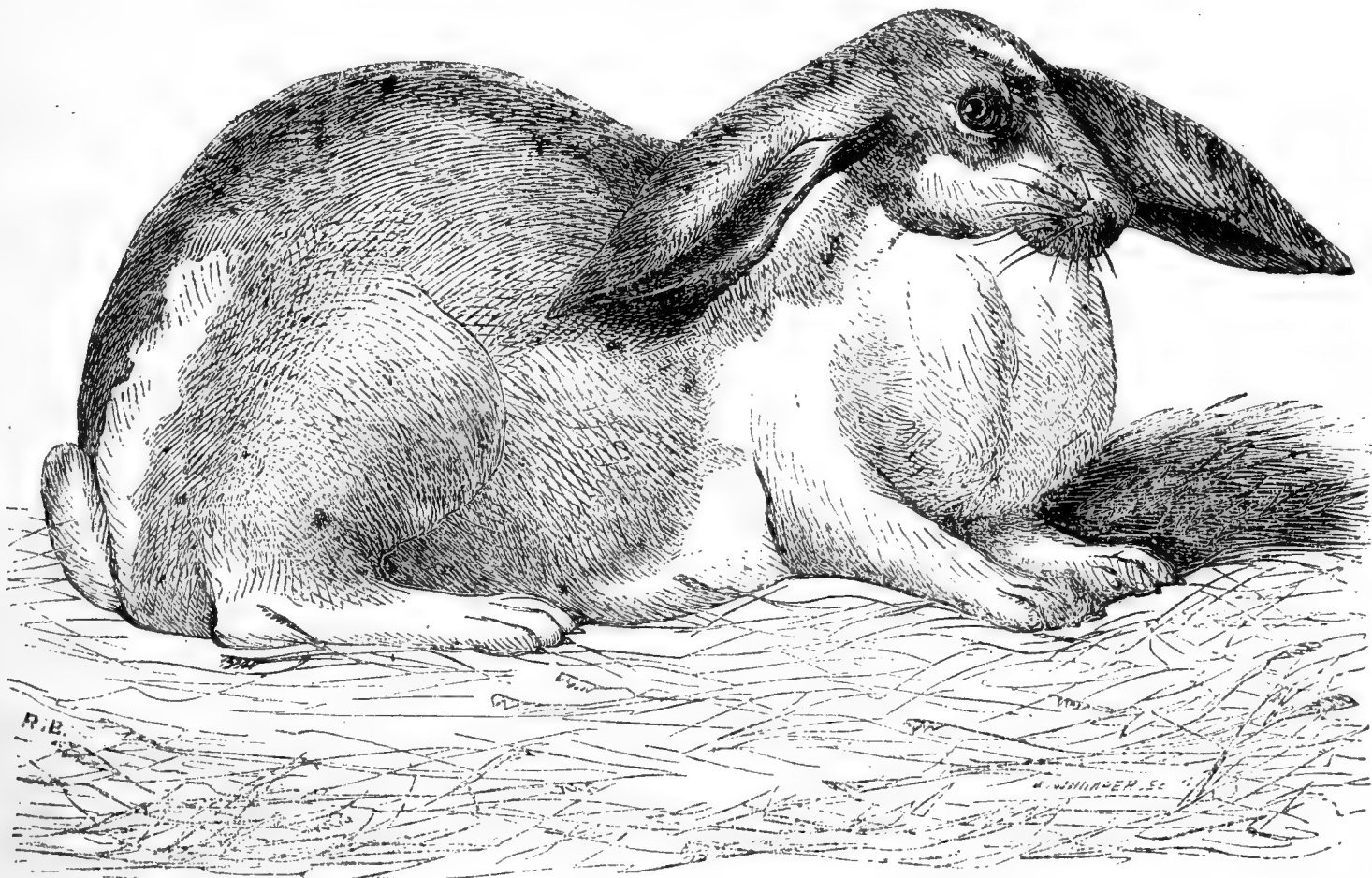
The prizes for chickens are upon the same liberal scale as at the Winter Exhibition, and an improvement is made by giving four prizes to Hamburg cocks instead of two, viz., two to the Pencilled and two to the Spangled. The prizes for Ducklings, Goslings, and Turkey Poults are reduced, as they are not of sufficient public interest at that time to warrant prizes so large as at the Winter Exhibition. The prize-list for Pigeons is the same as at the Winter Show, with an additional prize for Blue Turbits, and an alteration in the last class, making it more comprehensive, and admitting *any other variety* for competition. The prize-list for Rabbits remains the same as at the Winter Show.

Entries close on the 11th of July.

FANCY RABBITS.

(Continued from page 371, Vol. XVII.)

THE OAR-LOP.



THE "Oar-lop" more closely resembles the "Full or Perfect Lop" than any other variety of this breed. It is so called from the peculiar position of the ears, which are directed horizontally outwards at right angles to the head, and which bears some resemblance to the oars of a boat. Many Rabbits of the very best blood are apt to hold their ears in this position, and should not be discarded as breeding stock on this account alone; for, although unfit for exhibition (unless, indeed, they compete for *size* alone, in which class the ears are not considered), they are as likely to breed valuable stock as their more perfect brothers and sisters. It is very seldom, *if ever*, that a cletch of young Rabbits is produced in which every specimen is perfect. Some will generally be found deficient either in length of ear or carriage of ear, although both parents be of the very

best strains; and in this case, if retained, the defective specimens may prove as valuable for breeding purposes as the very best. But, too often, this peculiarity is the result of a cross with the common Rabbit—it may be at some distant period; and, if this be the case, it is better to fatten such specimens for the table, and to introduce animals of a purer strain as a fresh and improving cross.

If the young "Oar-lop" be impure in strain, yet with promise of *very large size*, and be well marked into the bargain, it would be a pity to destroy it at once, for, as I have already stated, it may prove successful as an exhibition Rabbit for that one point; and, moreover, the position of the ears, though less esteemed than the "Full-lop," is second only to that model of perfection.—PERCY BOULTON.

MELROSE POULTRY SHOW.

I HAVE attended many Poultry Shows in England, but hitherto having seen nothing of the way in which such matters are conducted in Scotland, and hearing that a "little go" was to come off at far-famed Melrose, I sent thither a pen or two of pets, and, following in their wake, arrived at this favoured-by-nature spot at eleven o'clock on a fine, fresh spring morning, just a "wee drappy" falling—simply a Scotch mist. Oh, how I wished, as I wended my way along the already flowing banks of "silvery Tweed," that some of my old opponents, some of the good fanciers of London and Birmingham, could with me have enjoyed that morning the more than double pleasure of seeing good birds, of breathing the purest air that blows under heaven, and feasting one's eyes on a landscape unequalled in the south of Scotland!

I may be wrong, but I have an idea that the generality of poultry (amateur) breeders must be, to a certain extent, "canny" men like myself, with a keen perception of, and an innate love for, all that is beautiful in nature, whether sent to us in the form of hill and dale, of lovely woman, or of Dorking cock.

But I am going a little too fast ahead, and must now proceed to give a short account of the Show.

Considering that it is the *third* annual Exhibition at Melrose, I must say that I think our neighbours make but slow progress in the improvement of their poultry. There were, nevertheless, some good Dorkings, Geese, and Aylesbury Ducks, and one pen (such a quaint pen, Mr. Editor! I should like to know something about them) of *blue Ducks*! They averaged, I should say, from six to seven pounds each, and had they been *quite* blue, with no white feathers, would have been remarkably pretty birds. The prize-list, as you will see, is rather a peculiar one, prizes being offered for coloured and speckled Dorkings, whilst Hamburgs, Polands, and Game had to figure in the "promiscuous" class. But it would be "looking a gift horse in the mouth" to find fault with the arrangements of the Secretary, since *no* entry money whatever was charged for pens exhibited; and as there were plenty of Dorkings, but *one* pen of indifferent Hamburgs, *one* pen of Game Malay, and *no* Polish, it would appear that the Secretary knew pretty well the breeds that prevailed in the district. The awards were as follow:—

Turkey, 1st, Mr. George Baillie; 2nd, General Duncan. Geese, 1st, Mr. G. Baillie; 2nd, Mr. Erskine. Coloured Dorkings, 1st and 2nd, Mr. G. Baillie. Speckled Dorkings, prize, Mr. G. Baillie. Cochins, prize, General Duncan. Spanish, 1st, Mr. G. Baillie; 2nd, General Duncan. Bantams (Silver-laced), 1st and 2nd, Mr. G. Baillie. Any distinct Breed, prize, Mrs. Rutherford (cross). Aylesbury Ducks, 1st, Mrs. Rutherford; 2nd, Mr. Smith. Ducks of any other Breed, prize, Hon. Walter Scott (East Indian).—GALLUS.

[This ought to be called "The Scotch Exhibition for the Especial Benefit of Mr. G. Baillie and General Duncan."]

POLANDS AND BANTAMS.

I WAS much pleased with the remarks on Polands by "A WILTSHIRE POULTRY-KEEPER" in your No. 445. The points were exceedingly well described in my opinion. I am glad to see there is some one who stands up for Polands, as I consider they have been despised very much lately. There is only one thing in which I disagree with him, *viz.*, he says, "There is no lovelier breed than the Polands, nor any more profitable." Now, Sir, I consider the Hamburgs more profitable.

I also read with great interest "A WILTSHIRE POULTRY-KEEPER'S" remarks on Bantams in THE COTTAGE GARDENER of the 10th, only he there says that a yard *nine* feet square will afford ample space for the exercise of *twelve* Bantams. But, Sir, I say it will not, for Bantams, although such small creatures, like a good grass run; at least, I have always found my Bantams thrive better where they have had a good grass run than anywhere else.—A DORSETSHIRE POULTRY-KEEPER.

OUR LETTER BOX.

POULTRY TRESPASSING (E. C.).—You have no legal right to destroy your neighbour's fowls when trespassing. It is very vexatious that they

should scratch up your crops, and if their owner is wise and just he will aid you, by wire fencing or other means, to prevent such injury. If he will not do so let your solicitor give him notice that if the poultry again come upon your premises you will sue him for the trespass in the County Court. The amount of damages is immaterial.

FITTING UP A POULTRY HOUSE (A Manchester Subscriber).—It would occupy a whole page to answer your queries. Buy "THE POULTRY BOOK FOR THE MANY," which will be published on the 30th. Its price will be only sixpence, and it will give you plans and all the information you require.

POINTS IN DORKINGS (A New Subscriber).—Five claws, uniformity of colour, similarity of comb, white legs, are the chief points. You will find full particulars in the manual referred to in the previous answer. Your chickens have the *gapes*. The gaping is really an effort to get rid of parasitical worms in their windpipes. Inhaling the vapour of turpentine is the best remedy, with high feeding.

DORKINGS LAYING TWICE A DAY.—DELAYED HATCHING.—"I have two old Dorking hens mated with a cockerel. I find that both the hens lay in the night, and drop their eggs from the perches. Very frequently the eggs are either soft or the shell very thin; but, besides laying at night, they both lay regularly every day. Is it usual for Dorking hens to lay twice a day? I have just got a brood of Silver-spangled Hamburg chickens; they did not hatch till the 23rd day. Will you kindly inform me if this is generally the case with Hamburg eggs?"—H. C. J.

[For Dorkings to lay twice in the twenty-four hours is very unusual. Their egg system is over-excited, and we recommend you to feed them less, and upon less nutritious diet, giving them also plenty of green food. The Hamburg eggs, probably, were stale. Delayed hatching usually arises from weakness in the chicken.]

DO DUCKS REQUIRE THEIR OWN EGGS?—"Is it true that ducks can recognise their own eggs, and will not sit on those laid by others?"—H. W.

[Ducks cannot recognise their own eggs. Ducks are bad mothers; they are continually dragging their progeny in the mire and the water. If you mean the duck to sit let her be put in an old pigsty, where she can be confined with her young for the first fortnight. After that she may lead them where she will.]

QUANTITY OF FOOD NEEDED BY FOWLS.—"Nelly would feel grateful for being informed what quantity of corn she should give her fowls daily. Number, eighteen fowls, with pullets and three ducks. As they do not lay well she thinks she does not give them sufficient, but is afraid of over-feeding them."

[It is impossible to fix any quantity of food for fowls and ducks, as they eat more when brought into a yard in low condition than they do after they have been fed for a time. An allowance for fowls has long been discontinued, as it leads only to waste. Feed them just so long as they are anxious for food, and no longer. You need not be afraid of under-feeding them. Give them meal instead of whole corn, and feed them moderately three times per day. They will soon lay well. No fowls are well fed if they have food always within reach or lying about.]

DUBBING GAME COCKS.—MARKING CHICKENS.—HATCHING GAME CHICKENS.—"At what age should the Game cock be trimmed? Which is the best instrument to use for the purpose? How should the different broods be marked, so that you can select them without difficulty after they are all turned together? Is February early enough to hatch Game chicks for the summer show, say in August?"—B.

[Different breeders have different times and methods for *dubbing* their Game chickens. We believe about sixteen weeks to be the best time. Some use scissors, some a knife or razor. We prefer the last; and the operation should be done at one cut. The gills must be cut with scissors, and care must be taken not to cut the bird's throat as well. Chickens may be marked in the web of the foot, or the web of the wing, or the beak, or the eyelid. The web of the wing is the easiest way, and it is by perforating the web with a hot iron. Different numbers of holes may mark different broods. February Game chickens are early enough to show in August.]

GERMAN FEATHER-FOOTED TUMBLERS.—In reply to "T. L.," about twelve years since I brought over from Germany three pairs of white German Feather-footed Tumblers, and one pair of yellow Turned-crowned ditto. I afterwards parted with them to a dealer in Canterbury, who has since left, and I do not know where any of the breed can now be obtained.—B. P. BRENT.

ERRATA.—Flying Tumblers, page 451, line 25, for "a Grey Mottle" read a Gay Mottle; line 46, for "a white patch under the back," read under the beak. Short-faced Tumblers, page 13, line 7 from bottom, for "cuffing" read cutting.

DURATION OF GESE (G.).—The older, in moderation, the better they will breed. They will be as prolific when fifteen or twenty years old as they are now. Instances are recorded of Geese living to be more than eighty years of age, and then dying by violence. Other questions will be answered next week.

LONDON MARKETS.—APRIL 20TH.


POULTRY.

The market is still scantily supplied with young poultry. There is, however, but little trade.

Large fowls.. 6s. 0d. to 7s. 0d. each.	Guinea Fowls 3s. 0d. to 3s. 6d. each.
Smaller do..... 5s. to 5s. 6d. "	Pigeons..... 8d. to 9d. "
Chickens..... 4s. to 4s. 6d. "	Rabbits.... 1s. 4d. to 1s. 6d. "
Green Geese .. 6s. to 7s. 6d. "	Wild ditto..... 0d. to 0d. "
Ducklings.. 4s. 0d. to 4s. 6d. "	Leverets.... 3s. 6d. to 4s. 6d. "
Plovers' Eggs in bulk	1s. 9d. to 2s. per dozen.

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—April 21, 1857.

WEEKLY CALENDAR.

APRIL 28—MAY 4, 1857.			WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
D M	D W		Barometer.	Thermo.	Wind.	Rain in Inches.						
28	TU	Bethlehem Star.	29.561—29.540	55—25	N.	—	39 a. 4	16 a. 7	0 23	4	2 38	118
29	W	Harebell (Hyacinthus).	29.610—29.568	56—31	N.W.	—	37	17	1 17	5	2 47	119
30	TH	Bilberry (Vaccinium). [B. 1850.	29.633—29.610	57—29	..	07	36	19	1 56	6	2 56	120
1	F	ST. PH. & ST. JAS. PR. ARTH.	29.838—29.463	47—30	N.E.	12	IV	VII	2m19		3 3	121
2	S		29.977—29.970	54—27	N.W.	—	32	22	2 37	8	3 11	122
3	SUN	3 SUNDAY AFTER EASTER.	30.093—30.015	52—37	N.W.	16	30	24	2 50	9	3 17	123
4	M	Mare's-tail (Hippuris).	30.111—30.048	52—21	N.E.	--	28	25	3 1	10	3 23	124

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 63.1°, and 39.4°, respectively. The greatest heat, 81°, occurred on the 28th, in 1840; and the lowest cold, 20°, on the 2nd, in 1855. During the period 112 days were fine, and on 84 rain fell.

ORNAMENTAL GRASSES.

LAGU'RUS OVA'TUS.

(EGG-SHAPED HARE'S-TAIL GRASS.)



THIS is an annual. Root fibrous, whitish, woolly. Stems one or two, from eight to twelve inches high when cultivated, four or five jointed, round, leafy, marked with small furrows except near the top, where it is smooth. Leaves spear-head shaped, pointed, many ribbed, downy on both sides, edges wavy, abrupt, and sometimes rounded at the base. Sheaths of leaves swollen, ribbed, and very downy. Stipules oblong, embracing the stem, downy. Flower-spike about one inch

and a half long and half an inch broad, rather bent to one side, egg-shaped, many-flowered, very woolly, owing to the numerous greyish white, soft hairs of the calyx, and beset at the base with many empty chaffy valves (glumes) similarly hairy; the upper part is bristly, owing to the number of prominent, brownish beards (awns) of the flowers. Calyx single-flowered, formed of two long, slender, membranous, spreading valves, fringed, as well as their terminal awn, with many soft hairs. Corolla of two unequal valves, thicker and firmer than the calyx, the outer longest, oblong egg-shaped, concave, ending in two equal upright awns shorter than the calyx, and having a much longer one from the middle of its back, twisting in the lower part, tapering and direct in the upper, bent back when dry; inner valve smaller, edges turned in, cloven, awnless. Nectary deeply cloven, pointed. Filaments hair-shaped, shorter than the calyx. Anthers erect, oblong, cloven at each end. Germen oblong oval. Styles very short. Stigmas cylindrical, feathery. Seed oblong, blunt ended, with a furrow along the front, loose, but with the unchanged corolla wrapped round it.

It belongs to the Triandria Digynia class and order of Linnæus.

The generic name Lagurus is derived from lagos, a hare, and oura, a tail, both that and the specific name, ovatus, egg-shaped, referring to the appearance and form of the flower-spike. It is a native of France, Spain, Portugal, Italy, and Sicily; but, having been found in the Island of Guernsey, it is entitled to be numbered among the British Grasses. The first author mentioning it is Dodoens, in 1578; but he, as well as Gerarde and Parkinson, calls it Alopecuros, or Fox-tail Grass. Gerarde's description is correct as far as it extends:—"This kinde of Fox-taile Grasse groweth in England onely in gardens. It springeth up in May of the seed that was scattered the yere before, and beareth his taile with his seed in June." From this we learn that it was cultivated in England in 1597, more than forty years earlier than is stated in the Hortus Kewensis. It is a native of sandy soils near the seashore, where it blooms in June. We should sow the seed in September on a warm border, and early in April transplant the seedlings to where they are to remain, in patches, without disturbing their roots, and during showery weather.

SPRING FLOWER-BEDS AND MIXED BORDERS.

(Continued from page 33.)

ON seeing a "quarter" of *Forsythia viridissima* in bloom it struck me that it would "pay" to have this shrub grown in large quantities for the winter garden, that is, for filling up flower-beds along with evergreens and Wallflowers. Dwarf, bushy plants pruned on purpose for this work, so as not to be much higher than eighteen inches or two feet, might easily be prepared in quantities by the trade. The way to do it would be to cut down the plants in April, after they were out of flower, as if they were Red or White Currants, and the young wood of the following summer would make the flowering wood for next spring; and, as it blooms without leaves, it seems to require a back of evergreen leaves to "bring it out" properly. *Forsythia viridissima* may, therefore, be set down in the climate of London as a fit and proper subject for helping out the spring garden in masses among evergreens.

The old favourite *Mezereon* is in every respect equally suited for the same purpose; and the two kinds of the little spring Heath called *herbacea* make the best edging to these temporary beds, and, with a sprinkling of *Wallflowers* among these shrubby plants, would be a better kind of finish and be more in character than any system of helps from herbaceous or border flowers. To be in character and to be on some regular system seem the grand secrets of flower gardening either in winter or summer, no matter what kind of character or what the system; but without both a world of flowers may be grown with little or no effect.

For some time past I have been thinking of what would be the best method for introducing the pretty little pet bulbs called *Scillas* into the spring garden. I went again yesterday on purpose to see them at the Kingston Nursery, where a bed of *Scilla præcox* was one of the prettiest blue masses I have ever seen, the flowers not more than three inches out of the ground; *Scilla bifolia* the same, but not so rich a blue; and *bifolia alba* was then (30th of March) just gone out of blossom. *Scilla Italica* is the next earliest kind in Mr. Jackson's collection. It will be in flower by the 10th of April, and will hold on a long while. *S. cernua*, a little Spanish bulb, comes next, and there are several others which will be in bloom by the end of April. All of them are as hardy as the Crocus, and as easy to keep. I had a collection of them five years since from Mr. Sim, of Foot's Cray, Kent, and from them and my other experience and researches I have come to the conclusion that it is not desirable or wise to use them in the flower-beds, because they are so easily overlooked when not in leaf that few could help destroying them unawares. But in almost every garden there is a tit bit of a narrow border, or rather, a good aspect and shelter to make a choice border for tit bits like these and such things. A foot deep of black or brown sandy loam on a dry or drained bottom will suit all these little bulbs to perfection, and when once they are planted in patches they are done with for the next five or six years. All bulbs and every annual which one cannot bring into a system of bedding should be planted or sown in patches, for this reason—that pot plants, or any kind of summer plants, can be got in between the patches to succeed the patchwork. Every one of such bulb patches ought to have a durable tally, that is, not easily broken, with the name, or a number corresponding with that of the kind of bulb in the garden book; but the best way would be to use upright 32-sized pots without bottoms, or with the bottoms knocked out with a hammer, and to sink the rims just half an inch below the surface of the border. The pot thus placed to be filled with the nicest compost

one can make, say leaf mould, rotten peat, and fresh sandy loam from a hedge bank, common, or roadside in equal proportions, to press it firmly in the pot, to put the bulbs or the patch of bulbs just one inch below the rim of the pot, and to fill up with the soil of the border. *Hyacinthus amethystinus*, a nice dwarf Scilla-like bulb and flower, should always go in with the Scillas. Mr. Jackson has a double kind of this bulb, which will not be in bloom till the end of April, and the single and double *Wood Anemone* are now coming through the ground to succeed the bulbs in May; but we must keep to April now till we can register and put every plant that blooms in its proper place and character.

To March belongs the Dog's-tooth Violet (*Erythronium dens-canis*). There was a large bed of it in bloom in front of the plant houses, which will keep so till the middle of April; but the best way to have it in a private garden is just like the Scillas. They are getting up a stock of a most elegant little edging plant, a variegated *Arabis alpina*; also *Teucrium fruticans*, a frame plant, with hoary leaves, which are as silvery underneath as those of any plant in the catalogue. It is as old as the oldest rafter in the kingdom, and used to be among the greenhouse plants to plant out of pots when I was a boy, and is now to be re-introduced, as it were, to make edgings of it, like the Frosted Silver plant.

Ranunculus amplexicaulis is the last of all that I have seen in flower in March—a very old herbaceous plant of upright growth and pure white blossoms. What a pity we could not have it by the thousand for mass beds during six weeks of early spring, while the double yellow Crowsfoot (*Ranunculus repens pleno*) may be considered the last and the best of all the spring flowers. We have four vases of it at the Experimental Garden, which are edged with the *Doronicum*, and before the latter is done flowering the double Crowsfoot *Ranunculus* will not need an edging, for its own shoots will run over the sides of vases or beds.

D. BEATON.

WINDOW GARDENING FOR SPRING.

(Continued from page 35.)

HAVING discussed together the operations necessary for keeping our plants vigorous and healthy, we will next converse upon raising plants for ourselves from seeds and cuttings, as involving the most pleasing of all operations in gardening.

RAISING PLANTS FROM SEEDS.—Our space will not permit us to enter into the minutiae and the scientific rationale of the processes that take place before the seed is parent of a beautiful tiny plant, though few subjects of investigation could be more interesting. Most of our readers know something of malt and its products in the shape of double X and triple X, if not something more stimulating, and whoever has watched the changing of the barley into malt will see the whole process of germination at a glance. The grain or seed of barley is composed chiefly of concentrated carbonaceous matter in the shape of starch. It is exposed to warmth, to moisture, comparative darkness, and within reach of air. The grain absorbs the moisture and swells, the starchy matter is changed into sugar for the nourishment of the embryo, and the root is protruded at one end, and the little stem at the other.

Warmth, moisture, comparative darkness, access to atmospheric air, and a soil so constituted as to be suitable for the plants, and for securing the presence of these conditions, are therefore what are essential for practical purposes.

WARMTH.—For window plants the seeds will not vegetate freely under 45° to 50°; and they should seldom, especially after germination has taken place, be above 60°, or they will become weak.

MOISTURE, though present, must not be in excess, or the seed will rot, and more especially if at all covered deeper than it ought to be. It is safest for all seeds to allow them to absorb moisture gradually. It is especially necessary for

seeds that are supposed to be old. When placed in soil that is adhesive and wet seeds often perish, because they are so coated as to be excluded from air and its oxygen, without which the embryo, even if stimulated into action, cannot live. Hence farmers and gardeners choose a fine dry surface for sowing seeds. If sown in a wet tilth many of the seeds would be clogged up from air. Future rains and waterings have nothing of this clogging effect, because they pass through the soil and take air with them.

COMPARATIVE DARKNESS is also necessary in practice. Some experimenters have sown some seeds on wet woollen cloths full in the sun, and thence inferred that neither earth nor darkness was necessary. They have also alluded to small seeds that sow themselves, frequently too freely, and to the spores of Ferns, &c., that need no covering; but even in the case of these small seeds they vegetate best in shady places, and, if examined, it will be found that most of their surface is embedded, whilst myriads are dried up from exposure, and never vegetate at all.

Just as in the case of the barley, a healthy germination depends on the hard matter of the seed being changed into one of a soft, mucilaginous character, whilst the action of the sun and free admission of air have the tendency to make the hard matter still more indurated; in other words, to concentrate still more its carbon. Hence an old seed, with its vital powers still existent, requires more time to germinate than a younger seed. Hence, again, of two seeds gathered from the same plant, say two Peas, the one quite hard, the other comparatively soft and sweetish, though perfect, the hard one will be the best for keeping; but if sown together the soft one will germinate much the sooner, because it has hardly lost its sweet, mucilaginous character; whilst the hard one must so far lose time in getting back to that soft, sweetish condition with which the other would start at once. In such a supposititious case the softish Pea would require much less moisture for germination than the hard one. The whole matter would be much simplified did we keep in mind that before seeds germinate freely they must be brought back to the soft, mucilaginous condition in which they were before they became thoroughly ripened in the seed vessel. Exposure to the sun is the greatest enemy to this *softening*.

The *covering* or shading of seeds we therefore consider to be a matter of importance in practice. The depth of that covering must ever be proportioned to the size of the seeds and the closeness or openness of the soil used for covering. A good general rule is to cover the seeds *only* to the thickness of their own diameter. Very small dust-like seed should only be covered by dust as fine, or, what is generally better, sown and slightly pressed on a damp surface, and shaded from the sun and protected from free access to a dry air until the seedlings were fairly up.

The soil used for sowing seeds in artificial circumstances should be light and sandy in preference to being close and adhesive. If very sandy, however, it will not retain enough of moisture; if there is too much clayey loam in it, it will retain too much; and, when at all wet, air will not get into it so freely as it ought to do. Such sandy loam as was recommended for potting will do very well, with a considerable quantity of sand added. A little heath soil will also be an advantage, and so would a little fine, decomposed leaf mould. For want of these a little charcoal powdered rather roughly will be an acquisition. Many other things have been used for accelerating vegetation, but with little or no ultimate advantage in the case of healthy seeds.

Failures with amateurs in raising plants from seeds in their windows have chiefly proceeded from sowing in soil that was too wet or too dry, from imperfect drainage, from placing the seeds too deep, or from filling the pot so full of soil, and sowing them so near the surface, that the little things were either scorched with drought or were washed away by a deluge from the water-can. All seeds sown in pots are more difficult to manage than those in the open air, unless a proper system of some kind be followed. The one I practise is very simple, and, if carried out by others, I can guarantee there will be fewer complaints against seedsmen sending out seeds that will not grow. R. FISH.

(To be continued.)

VISITS TO NURSERIES.

PINE APPLE PLACE, EDGWARE ROAD, LONDON,
MESSRS. ARTHUR HENDERSON & CO.

THIS has been for years the most "accomplished" nursery in London. The late Mr. Knight, of the Exotic Nursery, was the most ladies' man of his own class; but his plans and system of growth were not nearly so high in the science of cultivation and training as those at Pine Apple Place. Every inch and pane of glass here were familiar to the writer for more than twenty years; but since I doffed the blue apron in 1851 I had no occasion to call here till now, when I found everything in a higher style than usual. The first is the show-house, and it is three times larger than when I was last there; a glass division between it and a much longer house has been removed, and the whole range is now "the show-house." Behind this is a new style and system of showing—a large piece of open ground set out with hardy plants in pots, chiefly, at this season, with a selection of the best flowering shrubs, and the newest and handsomest evergreens, Conifers, Tree Pæonies, lots of Forsythias in bloom, and so divided among the evergreens as to give a flower-bed effect, just as was suggested the other day for filling beds in winter. This is of immense advantage to amateurs and new garden people—a kind of university to see and learn the effects of grouping and showing off all manner of plants to the best advantage in-doors and out.

The head proprietor of all this and the undersigned have been as one on colour, and on the effects of such and such arrangements, for the last quarter of a century. They were also the very parties who first introduced greenhouse Geraniums into masses for beds and bedding, and, at the present day, I look upon him as the best authority in England, or anywhere, on bedding Geraniums of that class. I made the most of the time he could spare that day to scrape off the rust of my last half dozen years on that head, and agreed to "bring out" a certain style of Geranium in a new character; but I must first go over the other things, as, if I once begin that subject, I shall forget the rest.

At this season the newest plants in a nursery and the best of the old ones, or all those that are most called for, are sure to be met with in the smallest compass in the different propagating houses. This is, therefore, the best place to study them, and to note them down for future use. We began with Gesnerads, and took the Gloxinias first. No tribe of plants has ever been so improved as this in such a short time, and the erect-flowering kinds are the most fashionable. The best three kinds of them are *Alba auriculata*, a marble-white flower, a fine tinge of delicate lavender round the throat; *Pavonia*; and *Violette*. The next best are Adams' *Oculata*, *Magnifica*, *Mars cerulea*, and *Princess of Prussia*; while *Grandis* and *Grand Sultan* are the best two of the old strain.

The best Achimenes are *Ambrose Verschaffelt* (pronounced Verskafelt): this is also my own favourite—it is a light flower, with all the veining black, or of a dark colour; *Longiflora major*, the best of all the blues; *Edward Otto*, one of the best rose ones; *Edmund Bossiere*, clear white, with purple stripes; *Dr. Hoopf*, the next best in the way of No. 1; and *Venusta* is yet among the very best of the real purple kinds. *Eucharis Amazonica* is the best trade plant of all the pot bulbs, and it will do as a warm greenhouse plant. It is certainly a most beautiful ivory-white, Lily-like flower, and blooms all the year round, that is, where there are some dozen or so of flowering bulbs. Mr. Backhouse's new African *Imatophyllum*, alias *Vallota miniata*, which has very little affinity with either *Vallota* or *Imatophyllum*, will be a scarce and dear plant for years to come. It seeds most sparingly,

and its offsets are few. Had the seeds been examined to determine its place among its fellows we should have had a better name for it. *Acacia longiflora magnifica* has been said to be the best of the family. I have just seen it here for the first time, and it is hardly second best, but it is very good. *Drummondii* is as much superior to this cried-up French sport or seedling as such crying up for the sake of a penny is disgraceful to true-born Britons. *A. grandis*, *diffusa*, and *oleifolia elegans*, for the dead of winter, are as good as most kinds, while *Riceana* makes naturally the best climber by its long, hanging-down shoots, and *affinis* the best artificial climber by close pruning and loose training; but all of them require close pruning after they are up enough for the place or pot. There is a fine collection of them here, and of the summer exhibition plants, of which there are many improved kinds from seeds, as *Epacris miniata grandiflora* and *Eriostemon pulchellum*, the best and most graceful of them all, for they were all in bloom. This comes nearest to *buxifolium*, which is not nearly such a good specimen plant. *Hypocalymma robustum* (not *Hypocalymna*) is a fine small-leaved, Hakea-like plant, with light rosy flowers, nearly as thickly set as those of *Acrophyllum venosum*, a little-known plant for a greenhouse specimen; *Hedera tulipifera*, another beautiful thing. *Dillwynia cinnabarina* is one of the very best kinds of that genus; *Bejaria æstivans*, a beautiful rosy flower, and one of the best of these alpine, hard-wooded, half-hardy plants (the name is pronounced *Beharia*); *Amphicome Emodi*, a splendid new kind, with Pentstemon-like, bright orange tube and a rose-coloured limb; *Bouvardia longiflora*, with flowers as white as snow; *B. leiantha*, the best of them all for beds, and a real bedding plant; *Chironia floribunda*, an elegant glistening pink flower of a favourite genus; *Lapageria rosea* and *rosea alba*, with Mr. Low's seedlings, which may chance to be of all colours. *Rosea* has been planted out in one of the Heath houses, and grows as luxuriantly in peat and with bog-plant culture as a *Mandevilla*, and blooms as freely at every joint. *Lilium giganteum*, kept in a cold house in winter, has thrown up a flower-stem as thick as my wrist without any artificial heat, and seems as hardy as a Tiger Lily, but it will stand a smart heat. Fine plants of *Linum tigrinum*, as old as the hills, and as good a winter bloomer as can be put into a pot; *Streptocarpus polyanthus* blooms six months in greenhouse heat, and is a most useful thing; *Passiflora Billottii*, between *cærulea* and some *quadrangularis* kind, is one of the best new Passion-flowers for a conservatory. *Cytisus filipes*, the white blooming kind, is done here to admiration, and on the coolest treatment. The *Rhododendron jasminiflorum* they cut for nosegays as freely and as sweet as Orange blossoms. The new white *Bouvardia longiflora* is much like it in the flowers. *Gastrolobium spectabile* is, perhaps, the very best of the Australian Pea-bloomers. Lots of the old *Doryanthes excelsa* to stand out with Aloes in summer, and to chance its blooming more stately than the American Aloe itself; *Adenandra fragrans*, the best of the *Diosma uniflora*-like class; *Babingtonia camphorosma*, a most useful late summer plant of the old school—a class which the shows have all but deprived us of; but most glad am I to hear that the tide has at length turned in favour of all the good old plants. *Blandfordias* are of this race, and *nobilis* is now as much sought after as the Pampas Grass for its spikes of orange and scarlet blossoms, which last for months.

Laurus aromaticus is as deliciously sweet as Orange blossoms, and they have a new style of Orange-blossom nosegays, the prettiest things I ever saw for bridesmaids and wedding parties. When the Orange buds are well formed, and numerous on the points of the shoots, they cut the shoots four or five inches in length,

put them into very small pots as cuttings, and these are well rooted by the time the blooms are open, and you might think the whole was done by magic; for the blooms are as large, numerous, and sweet as if taken from the best tree in Italy that very day. There ought to be three such plants on each of the corners of the marriage altar every time the knot is tied, and each of the bridesmaids ought to wear a wreath of the flowers. *Tetratheca ericæfolia* is the most lady-like flower in the greenhouse.

This being the emporium for the *Stylidium* family, I learnt that *mucronatifolium* is one of the very best, and I often said that where there were children some of these should be grown to explain a curious turn in botany, if for no other purpose. The following are the best twelve winter-flowering greenhouse plants:—*Acacia longifolia*, *Correa picta superba*, *Cyclamen Persicum rubrum* and *Atkinsii*, *Daphne Indica rubra*, *Epiphyllum* or *Cactus Snowii*, *Eriostemon intermedium*, *Linum tigrinum*, double red and white *Primula Sinensis*, *Stylidium tubiflorum*, and *Witsenia corymbosa*; and the next twelve are the most distinct greenhouse climbers: both are set down here purposely for future reference in "Answers to Correspondents." *Bignonia grandiflora*, *Clematis indivisa lobata*, *Fagelia bituminosa*, large, rich, yellow Pea blossoms and a neat habit; *Gompholobium polymorphum splendens*, an elegant slender-growing climber, with large orange red and rosy purple Pea blossoms in great profusion; *Jasminum grandiflorum*, *Lapageria rosea*, *Mandevilla suaveolens*, *Passiflora Billottii*, *Rhyncospermum jasminoides*, *Tacsonia manicata* and *mollissima*, *Zichya longipedunculata*. The best hardy climbers for their foliage are *Stauntonia latifolia* and *Lardizabala bitermata*, with Ivy-like leaves. The best two Ivies are *Hedera Algeriana*, better than the *Irish*, and *Ragneriana*, with the largest and thickest leaves of all the Ivies. The last has been three years in the Experimental, and bears out this character. *Andromeda formosa* beats *floribunda* in the "prodigious" clusters of snowy white flowers, as Balie Nicol Jarvey would say. All the *Ceanothuses* are proved here to be the best of wall plants. *Arthrotaxis selaginoides*, a low bush from Van Diemen's Land, is the most interesting and peculiar of all the Conifers. Here are some of the best plants of it in England. All the best *Dammars*, *Dacrydiums*, and finer Conifers are grown in pots here, and those which do better in the free soil are grown in a separate nursery lower down the country, whence they are drawn for the specimen or showing-off department of this the home nursery as fast as the sale of them renders it necessary. The Sikkim and Bhootan *Rhododendrons*, the Tree *Pæonies*, the China, Japan, and Indian *Berberis*, are very rich here, and in constant demand. The "run" for all really good plants is yearly on the increase. Every plant which THE COTTAGE GARDENER recommends on its own authority is "swallowed up" faster than they can propagate. D. BEATON.

FLORISTS' FLOWERS.

THE VERBENA.

THESE much-valued and esteemed plants, whether grown in pots or planted in the flower garden in masses, require now particular attention in propagating, potting, and very shortly planting out. As I am about to give my annual selection of the best new and older varieties, I trust a few remarks on their culture will not be unacceptable. It may be rather late by the time this is in the hands of our readers in regard to propagation; but my remarks will certainly be in time for the new varieties, as they will not generally be sent out

before the end of the month, and the knowledge stored up in the memory will be certainly in time for all sorts for the next autumn and spring.

PROPAGATION BY CUTTINGS.—I have no doubt the Verbena might be propagated by leaves with a bud at the base of each leaf, in the manner described by Mr. Beaton for Geraniums in the number for the 31st of March ultimo; but this plant grows so fast that there is the less necessity for such a method, and, besides, the operation in question requires such nice, almost hourly attention, that it is rather doubtful whether an amateur would be able to manage it; therefore I think that he had better be content with the older and more simple method of making his cuttings of the young tops of the shoots. Generally speaking, cuttings root all the more readily if the bottom cut is made close to a joint; but, in the case of the Verbena, nature has provided the buds, as it were, with roots in all parts of the stem. Hence a young top with a pair of leaves, and a quarter of an inch or even half an inch of stem below the leaves, is as good a cutting as could be made.

The first thing to do is to make ready a light compost, consisting of one part heath mould, one part loam, and one part leaf mould. This compost should be thoroughly mixed, and a little sand added to make it open and pervious to water. It should not be used till it is moderately dry. Then obtain a sufficient quantity of broken pots for drainage, and lastly a sufficient number of clean pots from four to five inches wide. Smaller pots sooner get dry, and larger ones are troublesome in potting off the cuttings when struck.

A gentle heat is absolutely necessary, and, as few amateurs have the convenience of a proper propagating house, a hotbed three feet thick, made of well-tempered stable dung, is the next best means of obtaining that heat. Leaves, also, make a good hotbed; but they cannot be so easily procured. Upon this bed place a one or two-light frame, and upon the dung inside the frame place a layer of coal ashes and old tan if that can be had. Then, as soon as the heat is moderated and sweet, take off the cuttings, with names on wooden or zinc labels placed to each kind. They may be allowed to dry a little by inserting the ends of each in dry sand. Fill a pot first with drainage an inch thick; then with the compost upon that up to within an inch of the top, and that space fill with pure silver sand; give it a gentle watering, and then plant the cuttings in rows across the pot. Stick labels with the names written on them facing each variety. If you have sufficient cuttings to fill a pot with all of one variety it will be safer in order to prevent mistakes. Press the sand close to the bottom of each cutting as the planting goes on, and as soon as a pot is filled give a gentle watering, sufficient to cause the sand to fill up the holes, and leave the sand quite smooth and level. Proceed in this manner till all the cuttings are planted, and then place the pots in the frame. If the heat is sufficiently moderate the pots may be plunged in the old tan or coal ashes: the cuttings will root so much the quicker by being so plunged. Take great care in shading from bright sunshine, and give water from a fine-rosed watering-pot whenever the sand becomes dry. With this care nine-tenths of the cuttings ought to strike, and be fit for potting off in a month or six weeks. When they are potted off in small 60's they should be replaced in the frame, and shaded for a week or ten days, when they may be gradually inured to bear the full light of the sun. Give abundance of air to harden them off ready for planting out or repotting for blooming in pots. For the latter purpose they should be severely stopped, and the tops made use of for cuttings. In the autumn cuttings may be put in under a frame, and when struck kept in the cutting pots till the spring. Probably some of our readers may have cuttings struck last autumn in

that manner. No time should be lost now to get them potted off singly, stopped to make them bushy, and hardened off ready for planting out towards the end of May.

CULTURE TO BLOOM IN POTS.—Choose nice bushy plants for this purpose, repot them into eight-inch pots rather shallower than the ordinary pot. For the greenhouse they may be tied to short sticks, so placed round the pot that the branches or shoots, as they grow, may be spread out to form a dense bush when in bloom. No flowers must be allowed to bloom until the bush is fully formed; then every shoot end will be furnished with a good truss of flower, and they will form very showy and beautiful objects. For exhibition the best method is to form a flat circular trellis two or three inches wider than the pot; this trellis should be made of small wire painted green, with four feet underneath, so attached as to allow of being thrust into the pot to support the trellis about five inches above the soil. The meshes of the trellis should be wide enough ($1\frac{1}{2}$ inch) to allow the shoots to come through. The shoots should be stopped, to cause a sufficient number of shoots to be produced as will, when in bloom, completely hide the trellis. Considerable judgment is required so to manage the blooming that all the trusses should be open in perfection on the day of exhibition. If the buds are fully formed three weeks previous to that day, and the plants are kept in a cold frame and shaded from hot sun, they will be in the greatest perfection. It is desirable, however, to have three or four plants more than the required number in the exhibition schedule, in order to make sure of the prize. A good exhibition of well-grown Verbenas in pots forms a fine feature in any exhibition. Sometimes prizes are offered for cut Verbenas in stands of twelve and twenty-four. These should be exhibited in such stands as I have described for Dahlias: they look best that way. In bottles without a box they do not make nearly so effective a show.

CULTURE IN THE OPEN GROUND.—In such a situation few plants make so pleasing a show. The bed or beds should not be too rich, for then the plants grow so rampant as to prevent a good show of flowers. I always found a good, common, rather strong loam, well mixed with river sand, answer the best for Verbenas, especially if the soil was changed, or the beds changed for them every year. Mixtures of several varieties in one bed are not by far so pleasing as a bed of one variety. Supposing a bed planted with a good scarlet, a band or edging of the variegated Alyssum sets off the scarlet to the greatest advantage. Then, again, a bed of pure white is much enhanced in beauty by an edging of the *Lobelia ramosoides*. So a blue might be edged with an edging of some dwarf yellow flower—the *Mimulus moschatus*, or Musk plant, for instance. These bands, by their contrast of colour, render the Verbenas much more pleasing in effect in the massing style. I would advise purchasers to order their plants immediately, and grow them this year in pots. The cuttings taken off them to make them bushy may be planted out in the mixture border to prove their quality for bedding purposes.

T. APPLEBY.

(To be continued.)

PRUNING OLD STANDARD APPLE AND PEAR TREES.

THERE are few subjects more prolific of dispute than the treatment of orchard fruit trees. "Let them alone," cries one; "Prune hard," says another; while a third insists that "the mystery is all at the root." Be these opinions of what weight they may, certain it is that a great many fruit trees are very unproductive, and many

of them unsightly. I do not mean wall or espalier-trained trees, which must of necessity be at all times subjected to an artificial treatment, but I allude to open standard or dwarf trees growing more or less in company with each other. Canker and irregular growth exist in many orchards, especially in those having a mixture of sorts, and when the desire has been to grow some of the old worn-out varieties in proximity with healthy, vigorous young ones. This, however, is hardly deserving the name of an evil, since no management whatever on the part of the cultivator can make them all grow alike; nor is it fair to accuse him of maltreating those which no means whatever could keep in health long; but what is worse than irregular growth is that disposition which many Apple and Pear trees have to become *moss-grown* at a much earlier date than they ought to be.

This complaint is not confined to damp or cold situations, for it is equally prevalent on dry, stony soils; and it is needless to say that when trees are much attacked with this parasite it is impossible for them to produce heavy loads of useful fruit. A moderate crop of small or inferior fruit is all that the cultivator must expect, and that not every year. Now, this moss-grown fruit-tree system has become a standing evil, and is assuredly on the increase. Many years ago trees were more free from it than they are now; that is, trees of thirty or forty years of age had not such a decrepit appearance as those of the same age have now. They were, in fact, longer lived, or at least lived longer in good health. The cause of this is difficult to explain; for certain it is that the treatment they now receive is usually the same as it was then, and we may presume that the soil retains the same inherent properties now as then. We come, therefore, to the conclusion that some perceptible change in the seasons is at work in the matter, to compensate for which we are called on to adopt some of the many artificial means within our power, and in applying these much judgment is required, otherwise the result may be the reverse of that wished for, and the disappointment be multiplied. A brief glance at the condition of things will enable us to form some idea of the evil to be grappled with.

In the first place we will suppose an orchard of some acres of mixed standard Apple, Pear, and Plum trees planted at regular intervals, with small fruits growing underneath them, the whole ground by this means being closely cropped and taxed to the utmost, and enrichment in the shape of manure being but tardily supplied. Digging and hoeing the weeds is, perhaps, all that is done; and what is worse, it often happens that the gathering of the small fruit crop is obliged to be done at the most improper time for the welfare of the land; that is, immediately after heavy rains, when the soil is pressed into the condition of brick earth, and effectually sealed against the beneficial effects of the sun. Certainly small fruits are not always gathered under such circumstances; but when fruit is ripe it must be gathered, whether the land be in a fit condition to be trampled on or not, and one or two such days often solidify it for a season. The gathering in of the Apple crop is often done in worse weather still, as few growers care much whether the fruit be wet or dry if it can be gathered. Now all this, accompanied as it is by a total shading from the sun, tends to lessen the fertility of the land, and is only counteracted by the winter's digging and manuring.

This is the way in which hundreds of acres of orchard grounds are served in this county (Kent), and, after all, it would be difficult, perhaps, to improve the system so far as explained; but we now come to the much-disputed point, the pruning of old trees. Young ones may be cut into any shape the grower pleases, but

generally the natural habit of the trees is copied, and judicious thinning and shortening of the shoots at some years is adopted; but by-and-by this is left off a few years, and the tree becomes more or less dense, the wood fills up, and a thinning of the wood again takes place when the tree has attained about its full size. Some six or eight years after this, probably, may have another cutting or thinning, or it may be allowed to grow as it likes. It then more or less thickens with useless wood, which gets mossy, and the question arises, What is to be done? As the trees at this time have a hoary, diseased appearance, the extreme tips being often composed of dead wood, and even shoot above one year old coated with moss of the silvery grey colour which, though beautiful in itself, is sadly at variance with a healthy state of things when it grows, the next stage is the production of Mistletoe, after which the utility of the tree for bearing fruit is at an end of the question. But what can be done before the last stage to arrest farther injury?

As I have before said, there is much difference of opinion here about pruning aged trees. Many growers of experience say that it is useless doing so, or worse than that, and point to the many instances in which aged trees fall into a sickly condition by being much cut. The vigorous constitution of the tree being gone, it cannot withstand extensive amputations, and many facts bear out this idea; consequently many growers allow their trees when old to grow on as long as they are worth growing, and then destroy them. Others follow the example because it does not involve any expense, as an omission of duty is much easier than the commission of a fault. Be this as it may, the bulk of orchard Apple and Pear trees are rarely cut at all after they have attained their full size, and have shown signs of approaching old age, and of those which have been cut only a portion do well afterwards.

Now, though it would be presumptuous in me to condemn the system of old experienced fruit growers, I think something more might be done to save old trees than usually is done, and I will here detail the mode I have adopted with an orchard consisting of standard Apple and Pear trees, which, during the last two or three years, have become much encumbered with moss and its concomitant features, dead tips of wood, &c. The orchard, I must observe, was on grass, which has for many years been depastured on by sheep, but has not received any other assistance. The trees are a fair distance apart, but the last two or three years have produced only indifferent crops, last year being all but a total failure, while there has been a great increase of useless wood, and a thick fleece of moss has covered the upper and sunny side of each shoot, even in trees that ought hardly to be yet at their prime. Why the moss should have so suddenly made its appearance I do not know, but I am certain it is that a damp bottom has no hand in the affair, as the ground is dry, resting on a stone-shattered subsoil. Now, whatever might be the cause of failure I will not here attempt to explain; but the trees were nearly all bad, and the means I have taken to improve them will need but a few words to explain. Whether my plan succeeds or fails I will in due time acquaint the readers of THE COTTAGE GARDENER.

In the first place I had all the trees carefully and moderately pruned or thinned in their thickest parts, taking care to cut out the lowest branches that were likely to hang in the way, and in many of the trees the parts cut out amounted to quite two-thirds of the whole of the bearing wood. This, of course, took some time in doing, but was carried out. The next thing was to try and destroy some of the moss, part of which was rubbed off in the pruning process alluded to. A coating of lime wash would undoubtedly have been the best thing, but that would have been a tedious job. I, therefore,

fore, took the advantage of a mild, damp day in the beginning of this month, and had them all dusted over with quicklime. There being a fair share of moisture at the time, much of the lime clung to the moss, and what fell to the ground was not lost. That this liming will effectually clear the trees I have not the least expectation, but it may check its growth, and if additional vigour can be given to the tree the ultimate result may be satisfactory. Now, to encourage the growth of the trees I have adopted the only available plan I could well resort to—giving the ground a good dressing of compost. Having cleaned an adjoining pond out in the summer of 1855, and mixed some lime with it last year, it is now in a good condition to lay on, and a good dressing of this will be of great service to the grass, if not to the trees, which I hope it will be. Certainly it can do them no harm, and I want to give the system a fair trial, as I confess to being rather sceptical of the inutility of pruning old fruit trees; but if I am wrong, and the case above proves so, I shall have no more hesitation in acknowledging the error than in reporting a favourable issue. Time alone, that true and unerring judge of all our proceedings, will determine whether it has been judiciously done or otherwise.

J. ROBSON.

CHINESE SUGAR-CANE.

THIS new plant seems to be destined to take an important position among American economical products. Its seeds were sent some six years ago from the North of China, by M. de Montigny, to the Geographical Society of Paris. From a cursory examination of a small field of it growing at Verrières, in France, in the autumn of 1854, Mr. D. J. Browne, then on a mission for collecting agricultural information and products, was led to infer that from the peculiarity of the climate in which it was growing, and its resemblance to Indian corn, it would flourish in any region wherever that plant would thrive. From this source he obtained some 200 pounds of the seed, which was distributed in small packages among Members of Congress, with the view of experimenting with it in all parts of the Union, and thereby ascertaining its adaptation to the soil and climate, and its economical value in the United States. In numerous instances the results proved highly satisfactory, as it attained the height of twelve or fifteen feet as far north as St. Paul, Minnesota, and matured its seeds at various points in Massachusetts, New York, Pennsylvania, and Illinois. The following year, while in France on a similar mission as above, Mr. Browne obtained several bushels of the seed of this plant, grown from that reputed to have been brought from South Africa by Mr. Leonard Wray, of London, and which has since proved to be identical with that obtained in 1854.

There appears to be a doubt among many in Europe, as well as in this country, as to the true botanical name of this plant. M. Louis Vilmorin, a scientific cultivator of Paris, provisionally gave it the name of *Holcus saccharatus*, which had previously been applied to the common Broom-corn, if not to other species, or at least varieties, of some allied plant. He also conjectured that it might be the *Sorghum vulgare* (*Andropogon sorghum* of others), and thought that it might comprehend a variety, as well as *Andropogon Caffra*, *bicolor*, &c., of Kunth. Mr. Wray, who has devoted much time and attention to the cultivation of this plant, with the view of extracting sugar from its juices, at Cape Natal and other places, states that, in the south-east part of Caffraria, there are about fifteen varieties of it, some of them growing to a height of twelve and fifteen feet, with stems as thick as those of the Sugar-cane, *Saccharum officinale*. M. Vilmorin also says that, in a collection of seeds sent to the Museum of Natural History at Paris in 1840 by M. d'Abadré, there were thirty kinds of *Sorghum*, among the growth of which he recognised several plants having stems of a saccharine flavour. Others are of the opinion that the common Broom-corn (*Holcus saccharatus*), the Chocolate or Guinea-corn (*Sorghum vulgare*), and the Chinese Sugar-cane (*Sor-*

ghum saccharatum), all of which contain more or less saccharine matter, belong to the same species, but are variations caused by differences of soil and climate, or by a disposition to sport after the manner of Indian corn and other plants under cultivation. The Chinese Sugar-cane differs from the others in containing a far larger proportion of juice, and consequently is more valuable for fodder and other economical uses.

In 1766 a plant analogous to the one in question was experimented upon at Florence, in Italy, by Pietro Arduino, for the extraction of sugar; yet it must have been of a different variety, as he describes its seeds as of a clear brown colour, while those of the Chinese Sugar-cane are of a shining, jet black, and in appearance identical with those of the *Sorghum vulgare* of the old collections.

DESCRIPTION AND HABIT OF ITS GROWTH.—The Chinese Sugar-cane, when cultivated on ordinary land in the United States somewhat after the manner of Broom-corn, grows to a height of from eight to sixteen feet, while in Europe it does not attain more than half this altitude. Its stems are straight and smooth, often covered with a white bloom or down, having leaves somewhat flexuous, falling over, and greatly resembling in appearance those of Indian corn, but more elegant in its form. Where cultivated in hills, containing eight or ten stalks each, it puts forth at its top a conical panicle of dense flowers, green at first, but changing into violet shades, and finally into dark purple at maturity. In France, and in the central and northern sections of the United States, it has thus far proved an annual; but from observations made by M. Vilmorin, as well as some experiments in our southern states, it is conjectured that, from the vigour and fulness of the lower part of the stalks in autumn, by protecting them during the winter they would produce new plants the following spring. It stands drought far better than Indian corn, and will resist the effects of considerable frost without injury after the panicles appear, but not in its younger and more tender state. If suffered to remain in the field after the seeds have ripened and been removed, when the season is sufficiently warm and long, new panicles will shoot out at the topmost joints, one or more to each stalk, and mature a second crop of seeds. The average yield of seed to each panicle is at least a gill.

CULTIVATION.—Since its introduction into this country the Chinese Sugar-cane has proved itself well adapted to our geographical range of Indian corn. It is easy of cultivation, being similar to that of Maize or Broom-corn, but will prosper in a much poorer soil. It does not succeed so well, however, when sown broadcast with the view of producing fodder, as it will not grow to much more than one half of its usual height. If the seeds are planted in May in the middle states, or still earlier in the south, two crops of fodder can be grown in a season from the same roots—the first one in June or July, to be cut before the panicles appear, which would be green and succulent, like young Indian corn, and the other a month or two later, at the time or before the seed is fully matured. In the extreme northern states, where the season is too short and cool to ripen the seeds in the open air, the cultivator will necessarily have to obtain his seed from regions further south. If it were important for him to raise his own seed, he could start the plants under glass in the spring, and remove them to the field or garden at about the period of planting Indian corn, after which they would fully mature. Two quarts of seed are found to be sufficient to plant an acre. If the soil be indifferent or poor they may be planted in rows or drills three feet apart, with the plants from ten to twelve inches asunder; but if the soil be rich they may be planted in hills, five or more seeds to each, four or five feet apart in one direction, and three or four in the other. The plants may be worked or hoed twice in the course of a season, in a similar manner to Indian corn. Any suckers or superfluous shoots which may spring up should be removed. The seed should not be harvested before it acquires a dark or black hue. Should the plants lodge or fall to the ground by the excessive weight of the heads, during storms of wind or rain, before the seed matures, they may remain for weeks without injury. In collecting the seed, a convenient method is to cut off the stalks about a foot below the panicles, tie them up in bunches of twenty-five, and suspend them in any secure, airy place, sheltered from rain. If intended solely

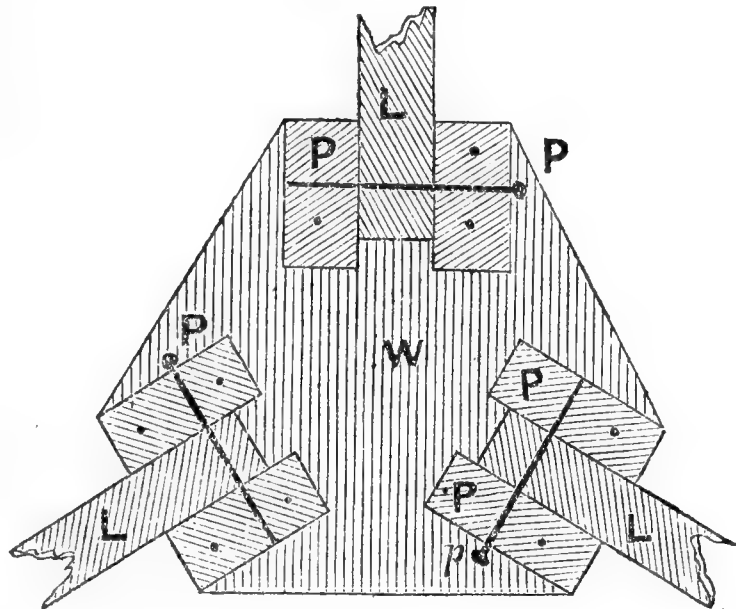
for fodder the first crop should be cut just before the panicles appear, and the second as soon as the seed arrives at the milky stage. It may be tied up in bundles, shocked and cured like the tops or stalks of Indian corn. If not intended to be employed for any other economical use, after the seed has been removed, and the weather be cool, and the average temperature of the day does not exceed 45° or 50° F., the stalks may be cut up close to the ground, tied in bundles, collected into shocks, or stowed in a mass for fodder in sheds or barns in a succulent state, where they will keep without injury, if desired, until spring. In this condition, however, the lower parts of the stalks will be found to be quite hard and woody, and will require to be chopped into small pieces for feeding.

Precaution.—Particular care should be observed not to cultivate this plant in the vicinity of Dourah corn, Guinea corn, or Broom-corn, as it hybridises, or mixes freely with those plants, which would render the seeds of the product unfit for sowing.

Specimens of the sugar and molasses produced from this cane in New Hampshire, Massachusetts, and other northern states, and numerous letters attesting its great value, have reached this city (Washington).—*New York Tribune*.

PHOTOGRAPHY FOR GARDENERS.

(Continued from page 9.)



CAMERA STAND.—The simplest form of construction is shown in the accompanying diagram. *W* is a triangle of wood one inch thick, 10"×10"×10", with the corners cut off. *PP* are pieces of wood 1" thick, each 2"×1½". These are nailed to the under side of the triangle. Pins (*pp*) passing through them form pivots for the upper end of each leg (*L*) of the stand. Our apparatus is now complete.

PREPARATION OF PAPER.

Solutions.		Cost.
A.—45 grs. of iodide of potassium in 3 oz. of	} s. d.	
distilled water		0 8
B.—50 grs. of nitrate of silver, 1½ drachms of	} 0 10	
glacial acetic acid, 1 oz. of distilled water ..		
C.—5 grs. of gallic acid in 1 oz. of distilled	} 0 3	
water		

N.B. Place the bottle in warm water while the gallic acid is dissolving.

The paper (*Canson's negative*, 2s. 6d. per quire),* cut to the size of the frame, is suffered to imbibe solution *A* in the same manner as described at p. 414 of the last volume.

It may be kept in a dry portfolio, and will not be injured by exposure to light.

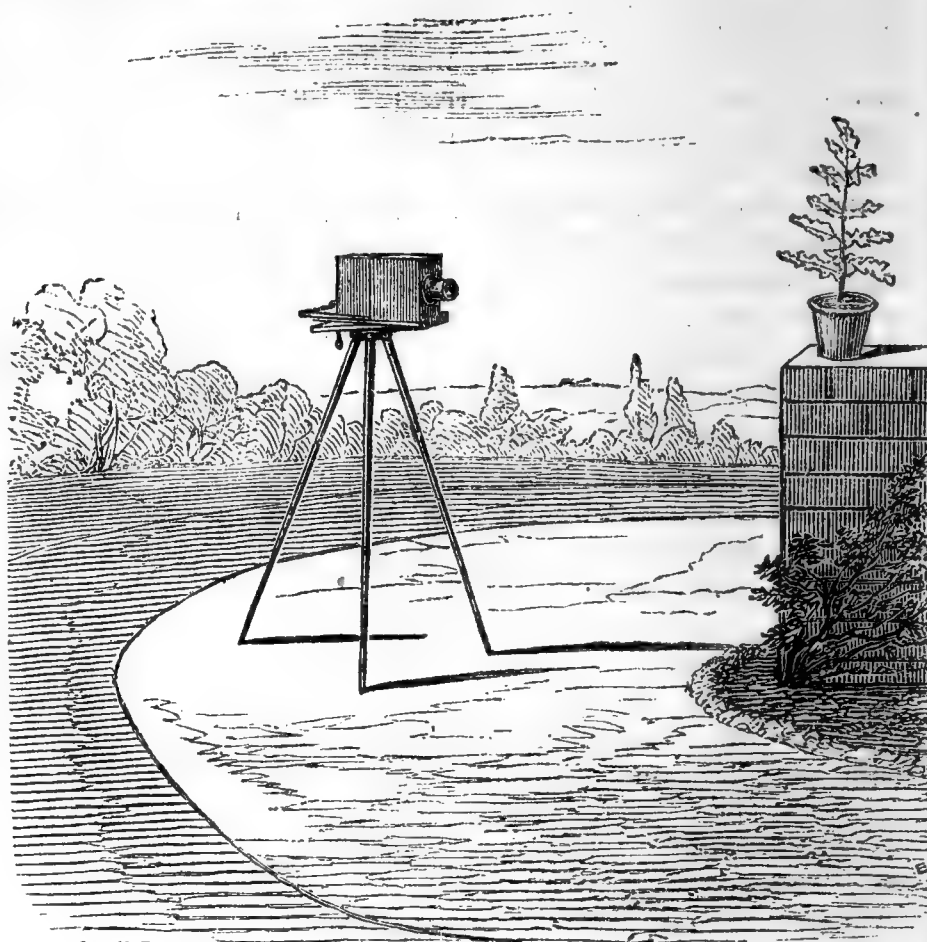
N.B.—The prepared side must be marked in one of the corners.

The plant to be copied is placed upon a wall or other firm support.

The camera is fixed on the stand, and the lens focussed until a perfectly distinct picture appears on the ground glass, which must then be drawn into the upper part of the camera.

Its position on the stand being noted, the camera is taken to the dark room (p. 414), where a piece of the previously

iodized paper is floated on solution *B*; after five minutes it is placed *wet* in the camera frame, and the latter attached firmly to the camera.



Having covered the lens by means of the stop, the camera is removed to the stand, and, being placed in position, the cap is withdrawn for a period, varying with the intensity of the light, of from five to twenty minutes. The proper time of exposure will be ascertained by practice.

The picture taken, the lens is again stopped, and the instrument removed to the dark room. The paper is then floated with its prepared side on solution *C* until the image develops itself.

When sufficiently intense the photograph is fixed by soaking in the solution of hyposulphate of soda (see p. 414) till the yellows of the picture are changed to a clear white; then wash well in water.

This produces a *negative* photograph; that is, the natural lights and shades are reversed.

To produce a *positive* picture it is printed on salted nitrate paper in the pressure-frame before described (p. 414).

If the negative be carefully preserved it will serve to produce an immense number of copies.

We have thus endeavoured to give our readers an idea of photographic manipulation in its simplest aspect. If there be anything they do not understand we will do our best to set them right. Photographic art is at present in its infancy; there is much room for improvement, and those of our friends who have leisure for experimenting will find that the juices of many flowers and vegetables expressed in alcohol form an exceedingly sensitive surface when applied to paper. "It seems that this photographic influence pervades all Nature; nor can we say where it stops. We do not know but it may imprint upon the world around us our features as they are modified by various passions, and thus fill Nature with daguerreotype impressions of all our actions that are performed in daylight. It may be, too, that there are tests by which Nature, more skilfully than any human photographer, can bring out and fix those portraits, so that acuter senses than ours shall see them, as on a great canvass, spread over the material universe. Perhaps, too, they may never fade from that canvass, but become specimens in the great picture gallery of eternity.

"How does this principle strew the path of eternity with flowers to that man who, in this world, finds his highest pleasure in doing good!"—EDWARD A. COPLAND.

BUGAINVILLEA SPECTABILIS.

THIS very showy plant has been in flower here for the last three weeks. Although the plant is five years old, this is the first time of its flowering. It is grown in an inter-

* Squire's, 52, King William Street.

mediate house, between a greenhouse and a stove, and is trained to a rafter about fourteen feet high. The first three years it grew rapidly, throwing out strong side-shoots, and was frequently repotted, but did not show any signs of flowering. The last two years it has been grown in the same pot, so that the roots have got cramped, which I believe is the cause of its flowering. The flowers are produced on last year's shoots from two inches to a foot in length.

This plant was brought here when very young, from Lisbon, by Lady Seymour.—JOHN McLAREN, *Cardington, near Bedford.*

ORIGIN OF THE HAIGH SEEDLING AND LAPSTONE KIDNEY POTATOES.

I AM quite sure that Mr. Appleby has been very wrongly informed as regards the raiser of the Haigh Seedling Potato. His name was Haigh, but he was no schoolmaster; he was

a shoemaker. As I was his next-door neighbour I know the story from the thread to the needle, and should not like any one else to be considered the raiser of that excellent Potato. He was called Mager (Major?) Haigh, and he did not live at Newton Kyne, but at Bartsey, near Leeds. That man, and no other, raised the above-mentioned Potato. After that he raised the *Lapstone Kidney*, and this having the form of his own lapstone, he said he would call it the *Cobbler's Lapstone Kidney*. Positively he was the raiser of both these excellent Potatoes, and of which I am of opinion that the Haigh's Seedling has the finest flavour. Haigh died at Bartsey in the month of February, 1856.—JUNO.

PICKLING LARGE ONIONS.—Cut them into *thin* slices or *small* pieces, and cover them with salt for two days. Afterwards pour boiling vinegar, with *ground* pepper, over them. When cold they are fit for immediate use. This is a first-rate, wholesome pickle.

ZAUSCHNERIA CALIFORNICA.

RAISED from seeds collected by Mr. Hartweg in fields about Santa Cruz, in California, and received at the Garden May 11th, 1847.

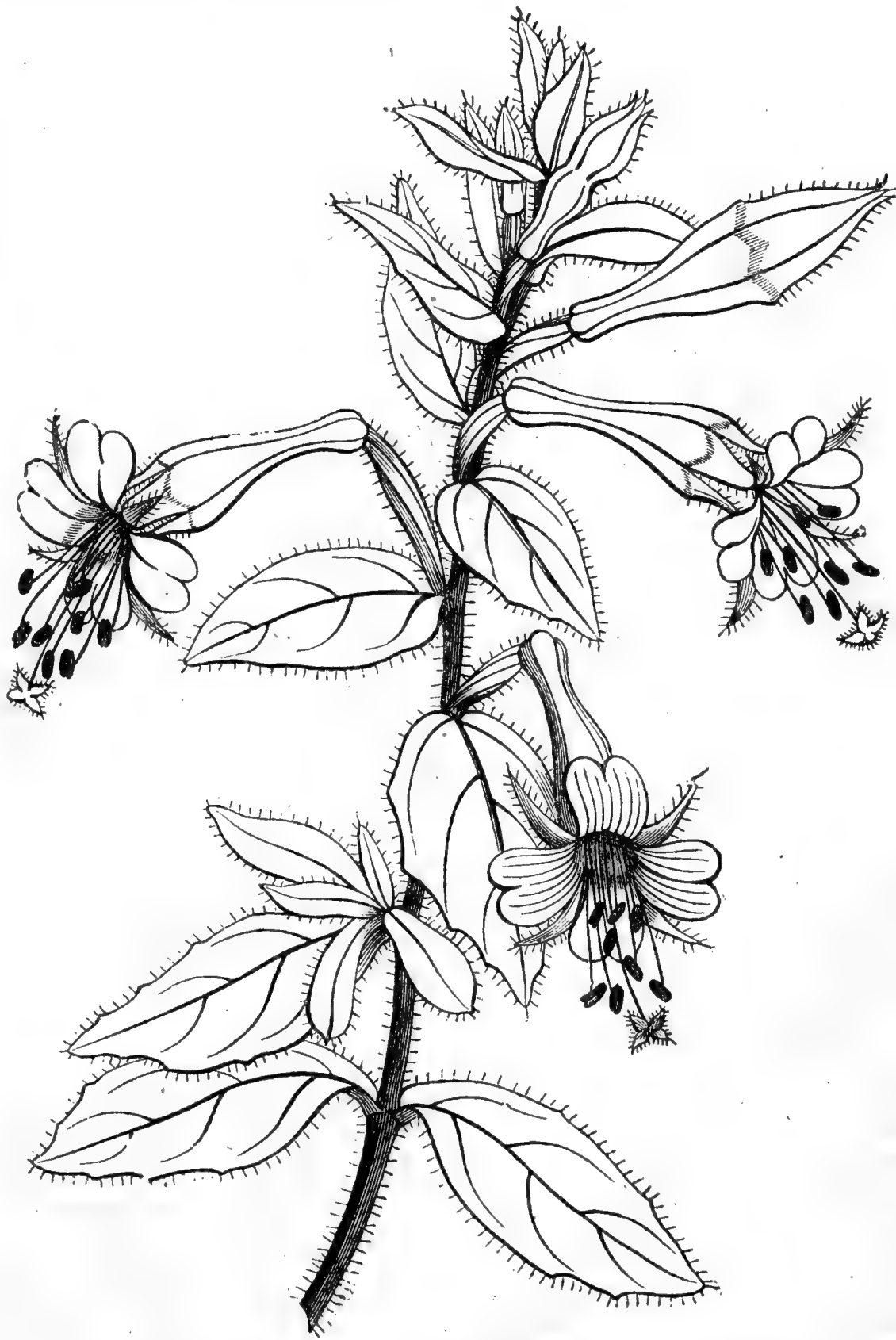
This curious plant, which it has so long been an object to obtain, proves to be a species of much horticultural interest. It forms a bushy perennial, about three feet high, clothed with ovate, sessile, toothed leaves, resembling those of a *Gaura*. Every branch emits from the axils of all the upper leaves one horizontal bright scarlet flower, about an inch and a half long. Its general appearance is not unlike that of a *Fuchsia*, but the calyx tube has four stout ribs. The petals, which are inversely heart-shaped, spread flat; the eight stamens, with red anthers, and a red four-lobed stigma, project beyond the flower.

The plant grows freely in good garden soil, and is easily increased by cuttings or seeds. The seedlings flower in the first season, in the month of September, if sown in May. It is a very fine hardy perennial, rivalling the *Fuchsia*, and most probably will flower from June to October if planted in a warm, dry situation on rock-work.—(*Horticultural Society's Journal.*)

NOTES FOR MAY.

THE April weather, sunshine and showers, that we have lately had, has been most propitious for vegetation, and the blossoms of Pears, Apples, and other fruit trees being remarkably strong and abundant, and of good colour, are favourable indications of a most fruitful season.

Vegetable Marrows and *Ridge Cucumbers* to be sown in a gentle heat, and leaves, dung, short grass, and any other fermenting materials to be collected into a heap, to be occasionally turned over until it subsides to a mild, gentle heat, when it will be fit to put into the trenches, which are generally made about three feet wide, and from eighteen inches to two feet deep. The fermenting materials to be covered about one foot thick with the soil that has been shovelled out of the trench. To give them a fair start, it is advisable to provide each plant with a bushel or two of rich, light soil, to be covered with handlights, and shaded from bright sun until



they make fresh growth, when the routine operations of giving air, stopping the plants, &c., must be carefully attended to.

Trenches from one foot to eighteen inches deep to be made for the early crop of *Celery*; six inches of rotten dung to be dug in at the bottom, choosing a dull day for planting them; to be well watered and shaded if necessary.

Seedlings of *Cabbages*, *Brussels Sprouts*, *Cauliflowers*, and *Broccoli* to be pricked out as soon as they are sufficiently large; and *Spinach*, *Turnips*, *Carrots*, *Parsnips*, and other such crops to be thinned out in time. Full sowings of *Marrow Peas* and some *Broad Beans*, and the main sowing of *Dwarf Kidney Beans* and *Scarlet Runners* to be made. *Asparagus beds* to be kept free from weeds, and when the supply from established beds is abundant the weakest heads to be allowed to grow, and good soakings of liquid manure to be given occasionally. Successional sowings of *Turnips*, *Lettuce*, *Radish*, *Spinach*, &c., to be made. *Jerusalem Kale* and the old English *Coleworts* sown now will come in useful for planting after the *Potatoes* are dug up. The hoe to be kept in frequent use amongst the growing crops to destroy weeds, and to loosen the surface of the soil wherever the late rains have hardened it. *Red Beet* to be thinned out to about nine inches apart. Cuttings of *Sage*, *Thyme*, *Lavender*, *Rosemary*, and such things, now put into a shady border, will soon strike root. Liberal supplies of water or liquid manure to be given to *Cauliflowers* and the transplanted or young advancing crops of vegetables.

The moderate *disbudding of fruit trees*, as recommended last month, to be continued; all the foreright shoots of the young wood to be removed, leaving only a few side-shoots that can be nailed in without crowding. All superfluous wood to be early and carefully removed from *Vines*. Trees infested with *green fly* to be syringed with weak tobacco water and soapsuds, and the *red spider* to be banished by the addition of sulphur. The surface of *Strawberry plantations* to be forked over, and towards the end of the month, if dry, to be well soaked with water, and the surface covered with a mulching of short grass or straw to prevent evaporation, and the fruit from being splashed with dirt.

The season of most active employment in the flower-garden department has now arrived, and as all apprehensions of danger from frost will be over by the middle of the month, the planting out of half-hardy plants for summer and autumn decoration should be then proceeded with, beginning with the hardier sorts, such as *Calceolarias*, *Lobelias*, *Salvias*; and after them scarlet *Geraniums* and the *Verbenas* and *Petunias* to have their shoots pegged down as soon as planted, and the strong plants of *Phlox Drummondii* recommended in a former notice to be planted out: it is most effective in large masses. *Heliotropes* and *Dahlias*, being more susceptible of injury from even a slight frost, to be planted out at the end of the month, and then the summer climbers and tender annuals. When planted, a good watering to be given early in the morning to settle the soil about their roots. To produce pleasing effects by well-arranged contrasts the different colours must be as distinct from each other as possible: white forms a good contrast with blue, yellow with purple, scarlet with orange, dark crimson with light blue, and so on through all the shades of colour. *Late propagated Stocks* to be forwarded by attention to watering and shifting into larger pots, to be gradually exposed to the weather as freely as circumstances will permit, but never to such an extent as to brown their foliage and dry up their tissues. It is an erroneous practice to allow plants to remain in small pots exposed to the sun and wind, and scantily supplied with water, under the impression of their being hardened off for bedding-out purposes.

Hollyhocks and *Dahlias* to have the surface of the ground well mulched, and to be staked and watered when they require it. Old plants with five or six stems to be reduced to three or four. The shoots of *Phloxes* and other such tall-growing plants to be thinned out, to obtain fine heads of bloom and increased strength for the remaining shoots, when the support of sticks will not be generally required. A good supply of *Ten-week*, *Brompton*, and *German Stocks*, and of *German Asters*, to be planted out for summer and autumn display.

Pinks, *Carnations*, and *Picotees* to be carefully thinned, staked, and tied as the stems elongate. Seedlings to be shaded from bright sun and kept free from weeds. *Polyanthuses* to be parted and planted in a shady situation. Now, when plants in the greenhouse are making rapid growth, it is necessary to allow them sufficient space to develop all their parts; therefore such late flowering plants, and such as have already flowered and made a kindly growth, and young stock that is intended for another season, may be

removed into a cold pit or frames, where, by attention in pinching them back to produce a regular and steady growth, they will do better than if they were left to cumber the greenhouse.

A few of the choicest *Cinerarias*, cut down and planted out into some good rich soil in a cold frame, will afford an abundant supply of strong offsets for potting off in the autumn. The *Camellias*, *Chinese Azaleas*, and *Orange trees* that have been kept growing in a moist heat until they have set their buds to be allowed a more free ventilation previous to removing them to the open air next month to ripen their wood. The young stock of hard-wooded plants to be supplied with a moist atmosphere and a high temperature during sunshine, with sufficient air at other times to secure a short-jointed and sturdy growth. The *New Holland Twiners*, when done flowering, to have their shoots well trimmed in before their summer growth commences, cutting out weak shoots, and securing plenty of young wood towards the bottom. Air to be admitted freely whenever the weather will permit, and a slight shade is necessary on the forenoon of a bright sunny day; but an abundance of light is indispensable for healthy growth and good-coloured flowers. To avoid night damps water must be given in the morning, that the superfluous moisture may be dried up before evening; but a gentle syringing and closing up at four or five o'clock on a bright afternoon will produce a genial atmosphere refreshing to the plants.

Fuchsias for late blooming to be kept in a moist, cool, shady pit, where they will grow more kindly than in a high temperature.

Young plants of the *Tea*, *Bourbon*, *Hybrid*, or *Damask Perpetual Roses*, placed in a cold frame, and occasionally supplied with pot room and manure water, and the flowers picked off as they appear, will make good-sized specimens for autumn and early winter blooming; good stocky growth to be secured by giving an abundance of air, exposing the plants to the night dews, and keeping the shoots stopped and tied out as may be required.—WILLIAM KEANE.

QUERIES AND ANSWERS.

PRODUCING DOUBLE FLOWERS.—STARVING PLANTS.

"A subscriber would like to know the Editor's opinion of the inclosed (printed) document relative to the growth of *double Stocks*. The only part referred to is *underlined*, and recommends the seedlings to be starved. How are they to be starved? Is it done by degrees or all at once, both by day and night? The plan is quite novel to the writer, who is—AN AMATEUR GARDENER OF DURHAM."

[We have no faith in this, but we have had specimens of seeds from the same parties, and we shall soon prove the fallacy of their conclusion, or of our own theory of making double flowers. The way to starve a seedling is to give it poor soil to begin with, and to allow it no more water than will just keep it alive. We do not know your fungus by the name of "Jew's Ear."]

BEDDING SALVIAS.

" 'KATE' wishes to grow all the *Salvias* worthy of a place in a flower-bed of mixtures, but has only the *Patens* and *Old Scarlet*. Will you give her a list? She has seen a small-flowered *Salvia a rose colour*, and another a blue. What are their names?"

[All the *Salvias* can be grown in one bed, if that is of any use, but some of them flower only in the spring, as does *S. Gesneræflora*, and others flower in September or October, or later. There are two kinds of *patens*, white and blue, and two of *fulgens*, the plain and variegated leaf. The old scarlet is *splendens*, and flowers only from October. *Salvia chamædryoides*, dwarf blue; *coccinea*, scarlet; *Grahami*, or *dulcis*, purplish blue; and *prunelloides*, dwarf blue, are all that we ever bedded or thought worth bedding; but there are forty or fifty other kinds, the names of which would only puzzle you if we were to insert them. You will get no sort of

interest in the way of effect by planting all or one quarter of the *Salvias*.]

RAISING A HOLLY HEDGE.

"I shall be obliged by your inserting an answer to the following questions:—Will not seeds sown make the best Holly hedge? When would you sow the seeds? How would you keep them till sown? In how many years, with proper care, might you expect to have a hedge?"—R. P. TURNER.

[Raising hedges from seed was one of the popular errors of the generation which is now being gathered to their fathers; but Hollies and Oaks, with all other trees, are brought up for hedges or for timber in less time, and at one-tenth of the expense, by nursery practice, than by the more natural method of sowing the seeds at once where the plants are to remain. Holly is the last of the hedge plants to sow "for good;" the Holly seed never comes up the first year, but lies dormant, like the "quick," one year. When they do come the seedlings are almost as delicate the first year, and as easily destroyed by slugs, snails, and "vermin," as the seedlings of *Tom Thumb* Geranium; but, supposing them to answer as well as any young Hollies ever did, the hedge will be ten years old from the sowing of the seeds before it is sufficiently strong to keep back a calf three months old; therefore, to get up *one* hedge or fence of Holly, you will have to keep up two good fences—one on each side—for at least twelve years; but if you sow the Holly seeds in the kitchen garden, and reckon everything, you may keep them there for nine years at less expense than one wood fence would cost you, and gain two years' size in the plants meantime. Hollies from a nursery should be planted, or be fit for planting, at the end of seven years from sowing the seeds; but if you rear them at home, and go through the best course of culture with them, take our word for it you will gain very considerably by not planting the hedge till your own plants are just ten years old from the sowing of the seeds. First of all, gather the seeds just before the annual tempting premium is offered to thieves and poachers to break down and steal Holly for Christmas. If you have more than a bushel of berries mix them with an equal quantity of sand, and bury them, or cover them in a heap as you would a heap of potatoes; if less than a bushel, put them in a box with sand, and bury the box, and at the end of the following October sow them, sand and all, and cover them half an inch deep. The best soil to sow them in is a piece of fresh ground which was trenched in the spring and planted with Potatoes. Next spring the seedlings will appear, and, to do them justice, they should be watered in dry weather during the first two summers. At the end of two years, in October, or earlier, transplant them into a newly-trenched bed or piece of ground at six inches apart, water as before, and at the end of four years transplant them again eighteen inches apart in rows, and six inches leaf from leaf in the row, and water at least next summer. At the end of six years take them all up, and *trim their roots*. Here is the turning point and grand secret of getting Holly fences. The plants being now root pruned, must have lots of rotten dung, as for an Onion bed, in their new quarters, and room enough to leave twelve inches clear from leaf to leaf between the rows, and six or eight inches from leaf to leaf in the row. Here let them remain three years, when they are ready to plant out in a hedge; but some prefer having the spade "run down" on each side of the rows, and leaving them another season. The site of the hedge should be trenched four feet wide and three or four feet deep the winter before; then planted with Potatoes; and, as soon as the Potatoes are up, down with the Hollies. We prefer buying four-year seedlings, and doing the rest at home.]

SYRINGING VINES AND PLANTS IN A VINERY.

"My house is a small one in three compartments, Vines in each. We do not force, merely exclude frost. Should Vines be syringed *before* they are in flower, and continued after? and if not, may Geraniums, &c., in the house be syringed without injury to the Vines? As my

gardener is much more successful with fruit out of doors than with Vines, I should be glad to know if there is any small work with plain, simple directions for Vine culture published? Is the 'Polmaise' system of heating approved of, or has it got out of fashion?"—A SUBSCRIBER, *Ireland*.

[We recently answered queries the same as your own. Some of the best gardeners syringe Vines freely before they come into flower, and freely night and morning afterwards until they begin to change colour; and if the water is good little injury will be done, and the practice keeps the leaves clean, and so far prevents the attacks of the red spider. The water here is not to be depended on, and therefore we rarely syringe above once or twice after the fruit is set, or most likely we should have a sediment on the berries. We syringe pretty regularly before the Vines are in bloom, not only to encourage the breaking of the buds and the growing of the young shoots, but as helping to loosen and render slimy the clay and sulphur paint with which we cover the wood when in a state of rest after pruning, as the soft state of that covering helps, in our opinion, to keep the eggs of insects pretty well sealed up from contact with the atmosphere. While we refrain, for the above reasons, from syringing the Vines, we syringe freely French Beans and any flowering plants that are growing beneath them; and even if there are no plants growing beneath at all we frequently sprinkle walls, paths, and floors before the Grapes approach maturity, and after that the drier they are kept the better. The syringing of the Geraniums will not, therefore, injure the Vines, though if the sun strikes the Geraniums before they are dry, and your glass is not super-excellent, you may get your Geranium leaves spotted.

You cannot, however, give your Vines the justice they require as respects temperature, &c., and keep Geraniums in a healthy state beneath them. You must make a compromise between them. The Geraniums require more air than would suit Vines when in bloom and swelling freely. You must have been doing something more than keeping out frost if your Vines are in bloom now. Our Vines kept so cool have just started their buds. The scarlet Geraniums will stand more heat and also more cold than any others.

Roberts on the Vine is very good, though we disapprove of using offal in the borders. There are also several cheap publications.

There are also full particulars given in our pages, and we shall perhaps have a small manual on the subject ere long. See Vine failures to-day. You would see in a late volume how Mr. Lane uses a modification of the *Polmaise* principle with success. We should be glad to adopt it as an auxiliary, and have done so at times; but few seem to understand it properly, and without that there is little chance of working it successfully. A common flue, all things considered, would be cheaper and more easily managed. The underground drains are about as expensive as a cheap flue. The brick stove with which Mr. Lane heats a long, low house, as described by Mr. Fish some time ago, is the simplest and cheapest we have met with; but that nurseryman has made the moving of heated and cold air a regular study.]

LIFTING VINES.—CAUSE OF GRAPES FAILING.

"Will you be kind enough to give me a few hints on lifting Vines, both as to the time and soil? also if rotten nettle roots two years old be good for the purpose? I began to force a vinery about the middle of January at 45° by night, and increased to 60° by night. The Vines showed abundance of fruit, but about a month ago the bunches curled up, went yellow, and consequently all, or nearly so, dropped off; those that stopped on are not in flower yet. They had not very many Grapes on last year, made some good wood, and ripened pretty well, and are making wood very strong this year, with healthy foliage."—Y. Z., AN OLD SUBSCRIBER.

[If you will refer back to our notes on Dalkeith Gardens last year you will see that Mr. Thomson top pruned considerably, root pruned, lifted, and replanted Vines at the end of May and the beginning of June, which Vines ripened the fruit that was left on them that year, and made such excellent wood that, in the following May when we saw them, there

was a fine, heavy, regular crop all over the house. Such success at such a period can, however, only be obtained by a free use of the moist heat inside, and thick shading from sun outside resorted to by Mr. Thomson, and possessing, at the same time, a good portion of his skill and experience. Had we a vinery unfruitful, and we attributed the cause to the roots being deep and wet, and the crop was not worthy of consideration, we should not hesitate to move Vines after they had started in the spring months; but we should guarantee beforehand a sufficiency of shade from bright sunshine, and no shade either mornings or evenings. Last year we planted some young *Sweetwater* Vines in a pit; but, from cramming the pit with plants, the Vines did little good, owing to the roots getting soaked. In the beginning of July we cut the Vines back almost to their base, and took away a good portion of the sodden soil. Young shoots came away freely afterwards, and were sufficiently ripened in the autumn to be now covered with fruit. As the place is small the shoots are not long, and we merely mention it as corroborative of what may be done with Vines in summer.

The best time for our correspondent to lift his Vines, so as to insure success the following year at the least amount of trouble and risk, would be from the last fortnight in September to the first week in October. By that time the fruit will be ripe and cut, and the wood will be approaching maturity, while the leaves will still have a green tint, though showing signs of maturity. The success will greatly depend on shading the house from bright sunshine, and keeping it in a moist growing state for a little longer than usual, in order that, by a reciprocal action between leaves and roots, there shall be a protrusion of fresh roots into the soil before winter, and which may be allowed to grow slowly all the winter by covering the border with litter, and using means to prevent its getting too wet.

The chief reason for lifting Vines at all is when the roots get too deep in wettish soil. If the roots are not too deep an extra supply of moisture might be got rid of by a deep drain along its front, and some means for excluding the heavy autumnal and winter rains. If cross drains are required for this purpose, and the roots are also deep, the lifting them within six or nine inches of the surface will be the most effectual plan, and the drains may be made at the same time.

In performing this operation it is best to begin with a wide trench in front of the border, and rather deeper than the roots, and go upwards to the wall-plate, picking most of the earth away from the fibres and roots as you proceed, and whenever they get long enough encasing them in a mat kept moist, or wrapped in damp moss, until you get up as far as you wish to go—to the wall-plate, or perhaps a yard from it, though we prefer the former. When this is done with two, or three, or more Vines at a time, you can regulate your border as to drainage, level, &c., before laying down and spreading out the roots. A border sloping from back to front, say one foot in seven or so, is much better than having it flat. In relaying the roots nothing is better than about equal portions of fresh sandy loam, lime rubbish, and very fine leaf mould. In this they will throw out fresh roots readily, and vigour can be easily given by surface dressings and manure waterings. We can say nothing of nettle roots for such a purpose, having never tried them; but if the smallest bit was alive it would give a good deal of trouble afterwards. If thoroughly dead, and yet rather fresh, they would tend to keep the soil open. If much decomposed we do not think they would be so good as leaf mould.

It is right to say that, without farther information, we should be unable to say positively whether deep roots were the sole cause of the failure complained of, or that lifting alone would remedy the matter in future. We have no hesitation in saying that the appearances spoken of may be attributable to three causes, and our correspondent will be in the best position to judge which of these was most influential in his case.

1st. As the wood is so strong it is possible that the roots lie rather deep in a cold, damp stratum, and the want of stimulus at the roots, when the stems were at 60° and upwards, caused the bunches to shrivel up, though the leaves were not greatly influenced. The fruit, in all its stages, is more sensitive of a check than any other part of the plant. The chief thing that militates against this idea,

and, consequently, against the necessity for lifting the roots, is the fact stated, that the Vines showed abundance of fruit; because, in such circumstances, the wood is frequently so imperfectly ripened that the show of fruit is thin, though the bunches may be fine and the leaves large. The going off, however, as stated, just leaves it possible that wet and cold, united with depth, were the cause of the failure.

2nd. Supposing the roots were near enough to the surface, there is nothing said of protecting them; and the nearer they were to the surface the more liable they would be to be cooled by such cold weather as we had in February and the beginning of March. We recollect a house being lost from this cause. The inside was from 65° to 70°; the roots were within nine to twelve inches of the surface, which was frozen hard. At a foot in depth the soil was barely 35°. The Vines made good wood for another year, but scarcely a bunch recovered: they hung welting in the house. If the border had been at 60°, or from 5° to 10° more, such a casualty would not have happened.

3rd. Such a result will take place, even if the roots are near the surface, and mulched to keep out frost, if the soil about the roots gets cold and water-logged, which the mere covering with litter has a tendency to do, as the atmosphere cannot get at the soil, and a proper hygrometric action is prevented. Though protecting the border in all such cases of early forcing is good, care should be taken that the protection does not make the border into a morass. Hence the importance of thatching, canvassing, or boarding over the covered border, or using some means to prevent the border getting extra wet. A friend of ours, a good Grape grower, whose border is rather flat, and who had covered it with litter, saw his bunches beginning to turn up as our correspondent's. Fortunately there were a few fine days, and the wet mulching was removed, and the border slightly stirred and exposed to the air, and the evil was stayed. If this fine weather continues it is doubtful, if he covers it again, though in the case of very early Vines, and the roots near the surface, whether re-covering with open, dry material would be necessary.

When Vines are planted inside, and most or part of the roots are within, there is no necessity for this trouble with covering to secure warmth. If the soil is allowed to dry in the autumn, watering with warm water will give both moisture and warmth.

Though, therefore, we have said so much on lifting Vines, we should advise our correspondent not to lift his until he has convinced himself that neither of the last two means have caused the failure, or that a good front drain would not remedy the evil.

We quite sympathise with the difficulty, for we have already chronicled in these pages how we have had Vines that grew so strong, and yet were so liable to shrivel and tendril their bunches, that we were obliged to place weights on the ends of the bunches as soon as they showed themselves, and to get a free show at all we were obliged to adopt the rod system of growing and pruning—that is, growing a rod this year to fruit it the next—and to take extra care, by means of a dry atmosphere in the autumn, to ripen the wood well. We raised some Vines, and planted young ones near the surface, and kept them there; and since then, though there is less vigour in the foliage, it matters not how the Vines are cut, there is sure to be plenty of fruit. But were we starting one of these Vines at Christmas, and its roots near the surface, and having a temperature of 60° to 65° at the end of February and the beginning of March, and the roots at from 35° to 40°, we should expect the bunches to bid us good-bye. When forcing is attempted pretty early, and there is an objection to covering the borders, the main root should be from eighteen inches to two feet deep, and dry enough there from thorough drainage. At such a depth we have found a few evergreen branches over the border in frosty weather sufficient. We should, however, prefer the roots nearer the surface, and covering of some kind used to keep the border warm and not clogged with wet.]

RESTING CAMELLIAS.

“Mr. Errington says, ‘I hold it to be somewhat important to give the plants a decided rest for nearly a month after

they have done flowering if possible.' How is this to be done when, as is the case with us, our plants begin to make their fresh wood immediately after flowering, almost before they leave the greenhouse?"—MARIA.

[The rest, we presume, consists in keeping the plants in a temperature quite as low, and a little lower if possible, than they were in when flowering, and consequently giving them quite as much air and less water. Where this can be managed not only the Camellia, but almost every other flowering plant would be the better for it. We consider Mr. Errington's late "History of a Camellia" as a first-rate outline of the successful culture of that flower.]

DESTROYING MICE.—I use "*Battle's Vermin Destroyer*" mixed with oatmeal, and folded in small packages. I drop these into each mouse hole that I can find. The following day I close the holes, so that I can see if any have come out. If such proves to be the case I use the same poison, but mix some butter or fat instead of the oatmeal, and it very rarely happens that the mice escape both. I like this mode of destroying them better than laying the poison near the stacks, as a cat or dog might then get it; but by the plan I adopt there is no such danger, as it falls down several inches in the holes. My reason for not closing the holes as soon as I have put the poison in is, that I may allow for mice being out of their holes at the time I put it in.—S., *Darlington*.

TO CORRESPONDENTS.

PLANTING A FLOWER GARDEN (S. B. T.).—Your flower garden is a "leaf" out of THE COTTAGE GARDENER, and no one can help liking the planting who has an eye for such things. Your centre bed is new in neutrals—a mass of *Perilla*, surrounded by *Flower of the Day* and *variegated Mint*, mixed with a band of a "dark maroon" *Verbena* round the outside: capital. We guess 4 and 5 are the nearest beds to the house, because of the planting; but the situation of the house ought to be indicated in all these kinds of plans. *Commander-in-Chief* is the right kind for 9. The pink Nosegay would do instead of *Flower of the Day* in the centre bed, as the *Mint* is master wherever it is. We are much pleased at seeing such rapid improvement in planting beds.

VARIOUS (Fillingham).—Many questions compel brief answers. 1. October, November, and February is the right time to spud out coarse grass from lawns, and that is the right way to get rid of it, but now it is fully six weeks too late to attempt it. After such an April we shall have the end of spring or the beginning of summer: so dry that your lawn would be ruined. 2. Nets are the only real safeguards against birds; but we would shoot (on the wing) all birds which infest buds and seeds. 3. Entirely a matter of individual taste; either of the ways is as good as the others. 4. Is answered under 2. 5. Yes, a very hard, durable, *black* walk. 6. All *clean*; heavy land would benefit by exposure to the frost, and foul, light soil should not be dug, except for convenience, till the end of spring. Unless the land is perfectly clean it should not be dug in the autumn and again in the spring; but strong land would be much improved by a *deep stirring* three or four times during the winter.

ISABELLA GRAY ROSE (A. B. C.).—You had better write to Messrs. Low and Co.: they are nurserymen, residing at Clapton.

WHITE HONESTY.—Mr. T. Spencer, Bradford, Wilts, would be very much obliged if "*FLORE*" could spare him a little seed.

HARD WATER FOR PLANTS (A New Subscriber).—Hard water is very objectionable. Rain water preserved in tanks or ponds, which are easily made, is far preferable. When hard water must be used, mixing thoroughly a very little carbonate of ammonia with it, and letting it stand exposed to the sun and air for a few hours is a good plan. The birds disbudbing your Gooseberries and Currants are either Bullfinches or Tomtits. The Chaffinches are innocent of that offence.

CUT FLOWERS IN A BEDROOM (Nemo).—All plants and flowers at night give out carbonic acid, and are, consequently, injurious if in any quantity. Perfumes, whether from flowers or other sources, are liable to cause headache if inhaled for many hours together.

LINUM GRANDIFLORUM (A Subscriber).—We have nothing to add to what we said last year about this plant. *Fowls' dung* is nearly as powerful as guano; use it in the same way for your garden.

ANTS IN A FLOWER-BED (A Subscriber).—You must either kill the bed of *Forget me Not* in order to destroy the ants, or allow the ants themselves to destroy it before you despatch them. There is nothing more easily done than to kill ants where you can get at their "nests." On a cold night when they are all at home scald them to death with boiling water; but if you do, first get up some of the plants to save the breed. We do not understand your term "*wild Tulips*." What kind or kinds do you mean?

HARDY WATER PLANTS (S., of Darlington).—A black, dirty pond we know of is just now as gay as a flower garden with the floating white Crowsfoot (*Ranunculus aquatilis*). Can you not get enough of it for the spring decoration of the green slime called duckweed? It should be called death's weed. All the native ditch and water plants would live in your pond or round it; but there is no demand for them, and therefore they are not on sale. You must collect them from their native places,

but a list of their names would not help you. There are no seeds of water plants to be got. Many kinds of pot plants would do in the summer. The best of them is *Calla (Richardia) Aethiopica*, and it would live out the winter under the ice.

NAMES OF RHUBARBS (J. Humphreys).—No one can tell with certainty from a young leaf. The earlier red variety is probably *Buck's Scarlet*. The other may be the old *Tartarian*.

REMOVING IRON HURDLES (A Clergyman's Executor).—We have no doubt that you are entitled to remove them if merely stuck into the ground. It makes no difference their being made of iron; and who for a moment would argue that wooden hurdles put to fence off a flower garden from a field might not be removed by the incumbent who placed them there, or by his executors if he dies before he has removed them? We know of no decision upon the point, and we believe, for the best of reasons, no reasonable successor to an incumbent has ever refused either to pay for such hurdles or to allow them to be removed.

BIRD ORGAN (Mesabelle).—We cannot give you any information.

UNEVEN LAWNS (J. G.).—The unevenness of the lawn can be very easily remedied by lifting up the turf, and filling up the hollow spots with suitable material to the proper level. The rushy Grass and Lichen you sent show that the soil is poor, or may be wet and sour, or overshadowed by Oak or other trees. If wet and sour draining would be the best remedy. The only way to clear the turf of these weeds, if they are objectionable, is to weed them out, and sow Dutch Clover and other proper Grass seeds in the spots. The little rush-like Grass is the *Luzula campestris*, or small, hairy Wood Grass, which is generally found on poor, barren soils. We cannot be certain as to the species of this leather-like Lichen, but believe it to be *Lichen caninus*, called also *Peltideu canina*, or the ash-coloured ground *Liverwort*.

DYTISUS IN AN AQUARIUM (A. S. P.).—It is not advisable to place *Dytisii* in the aquarium with gold and other fish. They are very voracious insects. Sticklebacks are also very savage creatures.—W.

SEEDLING VARIEGATED IVY (G. Archer).—There seems, at present, no difference between this seedling and the young shoots of the common variegated Ivy; but keep it to see how it turns out after another year or two's growth. We find that the best way to have fine growth and luxuriance in the variegated Ivy is to inarch it on the young or last summer's growth of the Irish Ivy. We had the two kinds against the house, and inarched them three years since, and now we could pass off the variegated as a new thing: this is worth looking to.

SOWING SEEDS OF IXIAS AND OTHER BULBOUS PLANTS (Amateur).—The seeds of all the *Ixias* and their allies should be sown (in October) thinly enough to remain undisturbed during the first season of their growth. As yours were only sown this year, no matter how thickly they are, they must remain so for two months longer, and then they will cease to require more room—they will be on their way to rest. *Sparaxis tricolor*, *Ixias*, *Tritonia aurea*, *Babiana*, *Geissorhiza Hookeri*, *Trichonema speciosum*, and *Cummingia trimaculata* will be at rest soon after, if not before Midsummer, and the coolest frame culture is best for them from this day. *Anomatheca cruenta* will keep green till October, and should now be colonised; that is, take the ball, and break it gently through the centre; then break each half into two parts, and after that divide each part into two or three bits, and each bit is a colony of little seedlings, looking very much like young barley. Put each colony in a 60-pot in sandy peat; keep them in a cold pit till June; then plant them out of doors in some warm place, as under a south wall, and they will bloom in September—the prettiest pinkish purple flowers you ever saw, which will seed like Poppies. *Amaryllis vittata* would do best plunged with young Pine Apples in a 10-inch pot till October, and to be wintered in a dry stove; but first of all transplant them now, three plants into a 48-pot in sandy loam, and another shift into 32's in July. In these pots they will flower in two years if all goes well, and some may bloom in one year.

VARIEGATED ALYSSUM (G.).—There are more variegated Alyssums than one, and you appear to have two kinds. The one we mention so often seems to be the same as the one which your gardener calls "variegated Candytuft." The variegated Alyssum is a sport from the old annual sweet Alyssum of our childhood; but some people have called it *Koniga*, a name which the best botanists in Europe cancelled. The sweet Alyssum is *Alyssum maritimum*; the yellow one of which you speak is *A. saxatile variegata*, a hardy perennial, suffruticose plant, and blooms in April. The annual blooms till the frost comes, and the variegated form must be kept by cuttings.

VARIOUS (A Cottage Gardener).—You put too many questions at once. 1. All fly insects are destroyed by tobacco smoke or tobacco juice. You must apply it as soon as the fly begins. The "grub" is kept down by hand picking two or three times a week. 2. *Linum grandiflorum* will grow in pots and in beds. 3. The best stage of growth to transplant annuals is as various as are the annuals themselves. Some, as Stocks, must be done when they have four leaves; and others, as Asters, at any stage, from the seed-leaf to the flowers opening. 4. Ammoniacal liquor is good for all plants, but use it carefully. 5. We cannot recommend plants as you ask. 6. The "Cypress Vine" is the *Ipomæa quamoclit*, a most delicate stove climber, with crimson, small, trumpet-shaped flowers; a most beautiful plant to be got up with Sensitive plants, Cockscombs, and Melons, and to be trained on sticks like *Tropæolum tricolor*, or, better still, up the rafters of a moist, hot Orchid house. It will not thrive in a dry greenhouse. The best time to sow the *I. quamoclit* is at the beginning of August, and to flower it the following season. One of our seasons is too short to do it justice, even if it were sown early in January.

NAMES OF PLANTS (An Old Subscriber, Burnley).—Your plant is the *Lunaria biennis*, and is frequently called Honesty or Moonwort. It is a native of Germany, and not indigenous to England. It is a very desirable and ornamental plant in the flower garden during the month of May. The seeds may be sown now in some by-place in the kitchen garden, so as to have a supply of plants for transplanting into the flower garden early in the ensuing spring.—(O. V.).—Yours is the dwarf Almond, *Amygdalus nana*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JUNE 3rd, 4th, and 5th. BATH AND WEST OF ENGLAND. Sec., Mr. John Kingsbury, 10, Hammet Street, Taunton. Entries close the 1st of May.

JULY 8th, 9th, and 10th, 1857. LEAMINGTON. Sec., Thomas Grove.

JULY 9th. PRESCOT. Sec., J. F. Ollard.

AUGUST 8th, 10th, 11th, and 12th. CRYSTAL PALACE. Sec., W. Houghton.

SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.

OCTOBER 1st and 2nd. WORCESTER.

SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Sec., Mr. H. Churchill, King's Head Hotel.

DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.

JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.

JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.

N.B.—Secretaries will oblige us by sending early copies of their lists.

GAME FOWLS, COLOUR OF THEIR LEGS AND OTHER POINTS.

THE remarks I addressed to you on Game fowls, and which appeared in THE COTTAGE GARDENER of February 3rd, have elicited several communications, which have been published in your pages. Your correspondents "W. H." and "NEWMARKET," whose communications are given in THE COTTAGE GARDENER of February 24th, do, in the main, confirm my opinions on this subject. "W. H." agrees with me in thinking that too much importance is attached to mere size in awarding prizes to Game fowls, and that white, yellow, and blue are the primitive colours for Game fowls' legs. "NEWMARKET," in whose communication I see indications of much experience, approves of what I said on the general characteristics of Game fowls, but prefers olive legs to white or blue. To the latter he objects as bearing too close a resemblance to the common Barn-door fowl. I think the reason why the latter fowls are seldom found with olive or yellow legs is because they are kept either for eggs or to supply the table; and, for the latter purpose, fowls with white or blue legs can, in this country, command a higher price in the market. If "NEWMARKET" considers olive legs peculiar to Game fowls let him try the effect of a cross between a yellow-legged cock and a common blue-legged Barn-door hen. I am much mistaken if a large proportion of the chickens would not have olive legs. Some, no doubt, would follow the colour of one parent, and some of the other; but in many the olive colour would appear as the result of the cross. Your correspondent "W.," in THE COTTAGE GARDENER of February 17th, doubts this; but it does not appear that he has ever made the experiment, and the opinion I have stated is founded on many experiments. Nor can I agree with him that white legs give "an appearance of softness" to Game fowls, and they are an essential point in the celebrated breed known as the "Derby Reds." I must still, therefore, adhere to my opinion that yellow, white, and blue are primitive colours, and that olive is a mixed colour produced by crossing. I am not sure that black ought not to be admitted as a primitive colour for Game fowls' legs, as we often find among the Brown-breasted Reds, Blacks, and Brassy-wings, birds very accurately marked in feather with legs of this colour, and it does not appear to be, like the olive leg, the result of crossing. To yellow legs I have no objection; indeed, the brilliancy of plumage with which they are generally associated must be a strong recommendation to every poultry fancier. Nor do I think the flesh of the yellow or even olive-legged birds at all inferior in quality to the white or blue-legged fowls; but, as there is a feeling, perhaps I should say a prejudice, against them in this country, they will not command the same price in the market. None of your correspondents have advanced anything which has weakened my objection to olive legs. That objection is founded on the following facts:—They are the result of a cross, and not an original colour; they add nothing to the beauty of the fowl; and they depreciate its value for domestic purposes.

As to the exhibitions, there is at present but one rule,

namely, that in the Game classes the pens must match in the colour of the legs; and in some varieties, as the Black-breasted Reds, we find birds well marked in feather with blue, yellow, white, and olive legs, but I doubt this being the case with all varieties of Game fowls; take, for instance, the Duckwings. In my communication to you I described what I think is the genuine colour both of the Duckwing hen and Duckwing cock, and the general correctness of that description has not been disputed. The Duckwing hen, I said, should be of a uniform slaty grey on the back, shoulders, and wings. I have bred Duckwing hens of this colour from the blue-legged and from the white-legged birds, but I have never succeeded in breeding them from the yellow-legged birds. The latter have always been more or less brown on the wing, and this I consider a fatal defect in Duckwing hens as exhibition birds; for, if Duckwing hens, brown on the wing and only grey on the back, and Duckwing cocks with red saddles are admissible, they may be bred equally well from a hen of the Black Red variety and a Duckwing cock as from genuine Duckwings. A few weeks ago I saw a pen of Game fowls which had been exhibited as Duckwings, and had taken several prizes and obtained a silver cup at one of the large shows. They were yellow-legged birds. The hens were grey on the back, but very brown on the wing; the cock a little red on the saddle. As soon as I saw them I said I did not consider them genuine Duckwings, but cross bred between the Black Reds and Duckwings, and the owner of the fowls admitted that this was the case. The silver cup in this instance was awarded by a gentleman who is considered one of our best poultry Judges.

If there is any strain of yellow-legged Duckwings of the colour I contend for I have nothing to say against them; but if we cannot have yellow-legged Duckwing hens without brown wings I think I am justified in giving the preference to white and blue legs in this variety of Game fowls. The olive-legged Duckwings are generally tolerably true in colour, perhaps from intermixture with the blue-legged strains.

Among the Black-breasted Reds I believe we have two perfectly distinct strains. In one the hens are dark brown on the back, shoulders, and wings, and partridge feathered; in the other the hens are lightish cinnamon colour, and without the partridge pencilling. The latter, in this part of the country, are called, by the old breeders, wheat-coloured hens. The partridge hen has a striped hackle, but the cinnamon or wheat-coloured hen has a clear hackle. Some breeders insist that the brown or partridge-coloured hen is the only legitimate colour; but there are unquestionable Game hens of the other colour which breed Black-breasted Red cocks, and if they are not rightly classed with the Black Reds I know not to what variety they are to be assigned. The majority of Game hens at our shows in the Black Red classes appear to be bred between these strains, and are of an intermediate colour, that is, they are partridge feathered down the back, and an unpencilled brown or cinnamon colour on the wings.

Some of the varieties enumerated by "NEWMARKET" I am not familiar with, and wish he had described them, and stated his grounds for considering them primitive varieties. "Yellow Duckwings, Silver Duckwings, Greys, and Dark Greys," form a rather comprehensive list, and some of the designations are new to me. The "Berry Birchen Yellows," or, as they are called here, the "Birchen Yellows," are probably a pure variety; and the Brown Reds which he also refers to undoubtedly are, and are as clearly defined in all points as any of our Game fowls.

The Piles "NEWMARKET" considers to be the result of a cross. This may be so, but in several experiments which I have made I have entirely failed to breed a single well-marked Pile by crossing, and I have tried both the Black Red and Duckwings with the White Game fowl. Some of the chickens approached very nearly the right colours, but all the cocks had black feathers in the tail—a defect, in my opinion, incompatible with a first-class Pile.

In this neighbourhood we have two kinds of Game fowls in which the cocks are hen feathered. In one variety they are partridge coloured, in the other cinnamon. I have never seen these birds in the south of England, nor the Spangled, which the old breeders here consider a pure variety. The cocks of the latter kind are black, white, and

red, the three colours being almost equally intermixed. The hens are spotted white and partridge colour. They certainly have the appearance of a cross, but are said to breed remarkably true, and in the days when Game cocks had to pass through a severer ordeal than an exhibition their reputation stood very high.

The observations of "NEWMARKET" on the breeding of Game fowls satisfy me that he has had great experience on this subject, and with most of his remarks I entirely concur; but I think the great requirement is to give a more definite form to the various points by which each kind of Game fowl ought to be judged. This I have attempted with the Duckwings, and the opinions I have advanced are founded on experience and careful observation.

In determining what are the true colours and markings it is essential to keep in mind that great test of purity of blood, the hereditary transmission of characteristics from the parent birds to their progeny. No fowls are entitled to be admitted as pure varieties that will not bear the application of this test; and, as primitive colours are always more uniformly transmitted than colours which are the result of a cross, a careful attention to this criterion would materially assist us in attaining the object in view.

I have no doubt that Duckwings of the colour I described in my first communication breed more uniformly than Duckwing hens with brown wings, and Duckwing cocks with red saddles. In the Black Reds the brown hen partridge feathered on the back and wings, and the cinnamon hen with clear hackle, produce chickens of greater uniformity in colour than hens of the intermediate colour. In the Brown-breasted Reds it is the black hen with the copper-coloured hackle that will best bear the application of this test. These, therefore, I regard as primitive colours in the several varieties referred to.

There is also another question connected with the breeding of Game fowls, that is, whether in some varieties the distinctive colours in the feathers are not more certainly transmissible when combined with legs of one colour rather than another; for instance, white or blue legs in the Duckwings; very dark or black legs in the Brown-breasted Reds; white or blue legs in the partridge-coloured hens; and yellow legs in the cinnamon-coloured hens of the Black-breasted Red variety. But I must not pursue this subject any further at present.—A NORTH COUNTRY AMATEUR.

CHARACTERISTICS OF BELGIAN CANARIES.— BREEDING PIED GOLDFINCH MULES.

YOUR correspondent, B. P. Brent, states that he has been a breeder of Belgian Canaries for thirteen years, and offers, through your periodical, his ideas upon their properties, but at the same time doubts whether they are considered requisite by English amateurs. His second and fourth points are decidedly not in character with the true and perfect Belgian, and I beg to refer him to the properties promulgated by a Nottingham fancier in your periodical of the 17th of March last, as possessing all the points necessary to constitute a first-class Belgian bird.

The same correspondent requests also to know if any successful breeder of Pied Goldfinch Mules could inform him the art of breeding those birds, as he has hitherto been unsuccessful.

From experiments tried by many individuals, sometimes with great patience and perseverance for a long series of years, the same results have attended their efforts, whilst others in their first endeavours have produced the most beautiful Pied Mules.

Mule breeding requires the exercise of much patience and perseverance, and superior judgment in the selection and management of the birds. I will, however, venture to suggest to your correspondent a method which has been found eminently successful in producing handsome Pied Goldfinch Mules.

Choose a strong, healthy male Goldfinch, two years old, with as much *white* about it as possible, particularly in the throat and chest, and select for its partner a strong, well-shaped, mealy-coloured female Canary—the lighter its colour the better—one year old. April is the month when

they should be associated, for then they are seeking their mates.

Mule breeding is best practised in the country, as good air and a lively situation are essential. Each pair should be kept in the first instance in separate cages. After a week or two remove them into a breeding cage of a tolerably good size, for the sake of admitting air and a sufficiency of light, and provide them with nest bags, &c. Place them at a moderate height in a quiet corner of a room where they are not likely to be disturbed, and they will soon set about their domestic duties. Give plenty of egg boiled hard and bread; sparingly of ripened dandelion tops gathered fresh; summer rape and Canary seed, with occasionally a few hemp seeds, and never interfere unduly with their privacy, but let all their food and water be fresh and clean, and I feel no doubt but your correspondent will announce, through your pleasing periodical, the fact of his being a *successful breeder* of Pied Goldfinch Mules.—JOHN ETHERINGTON, JUN., *Sneinton, near Nottingham.*

POLAND COCKS SHOULD HAVE NO COMB.

WHEN I was reading the letter of "A POLAND FANCIER" I was forcibly reminded of a speech made by a friend last week. I was showing him some Sebright Bantams of which I am not a little proud. "Ah! yes," said he, "very pretty, nice little toys, but not to compare to mine."—"Why not?" said I.—"Why not?" replied he; "mine are as large again." Just in the same way we meet with those who talk of their very first-class Spanish fowls. Our first question is, "Are they entirely white-faced?"—"Well," say they, "there may be a little red over the eye; but they are such large, fine, majestic birds." All these are right, and they are good and useful fowl-keepers; but if those who intend to exhibit are guided by them they will come to grief. Prizes are awarded according to admitted rules that have been acted upon for years, and none is more imperative than that which says a Poland cock should have no comb. In all the poultry pieces of the old Flemish painters a cock is figured with two spikes in front, and a something on his head between a lark-crest and a topknot. On this many of the comb school make their stand; but this is not a Poland cock, and it should always be remembered that a crested fowl is no more a Poland fowl in consequence than a five-clawed one is a Dorking. The topknot of a Poland fowl is unlike the "Brutus" of a Ptarmigan, or the lark-crests of some of the other breeds. That of a cock should not only be ample, but should sit aright on the head, and where a spiked comb exists this cannot be, as the fall in front, one of its chief points and beauties, is rendered impossible thereby.—PERRUQUIER.

LEGS OF THE GAME FOWL.

AH, "MERRY LEGS!" what fun you are having with the Game Judges! I quite agree with you, and as they are fair *Game* I will go on with it, only, perhaps, reversing the side a little. Now, what are the poor Judges to do? Every Game exhibitor believes that he knows what a Game fowl should be, and it is certain that no classes show so many good fowls or send them in such uniformly good condition; but, before all the Judges are condemned in one sweeping condemnation, let us see if they are wrong.

A capital writer on Game told us the other day in THE POULTRY CHRONICLE what the colours of the legs should be, and he would not allow any deviation. "MERRY LEGS" says, "Why attach so much importance to the colour of the legs?" Yet he is pretty well up. If in one class where all the best breeders are represented every hue and colour of leg is found, it does not seem that they are at all agreed as to what they should be. Every man will prove his birds are pure, and he will probably be right. Eccentric though they be, Judges have taught something even to Game exhibitors. Formerly half the pens had with three birds three colours of legs, but, as disqualification followed, that is now never seen.

One breeder writes, "Duckwings should have willow legs." "What!" says the second, "willow? You mean

blue." "You are both wrong," says the third; "they should be yellow." "It is all a pack of nonsense," says another. "I have bred and bought birds these thirty years, and the winning colour is the best." The truth is that there is no colour for the legs. All that is required is that they be all similar in the same pen, and, having ascertained that, the Judges must then be guided by points on which there is no difference of opinion, as shape, &c.

It is only in very small shows that Duckwings and Reds ever compete. They are generally classed "Black-breasted and other Reds," and then "Duckwings and other Greys." I quite agree that good Duckwings are the handsomest of all; but it is rare now to see any that are equal, setting colour aside, to the Reds. We want Mr. Thurnall again among them.

Disqualification should be cautiously adopted, as the exhibitor is not always the peccant party. Disappointment and defeat are punishment enough.—MALVOLIO.

COMB IN POLAND FOWLS.

Will you allow me to correct the monstrous assertions made in your last two weeks' papers on the subject of Polands? A comb in a Poland is the greatest defect that can exist, and a total absence of that, as well as of wattles, is one of the greatest desiderata of Poland breeders. I am speaking now of the bearded varieties, and can only say that, as a very large Poland breeder, I should wring the neck of the first chicken showing the "noble comb" so much admired, by a "POLAND FANCIER." It strikes me that a "POLAND FANCIER" must have got a remarkably bad strain of birds, and that the sooner he gets rid of them the sooner will he understand what a Poland ought to be. It is perfectly well agreed among all breeders that the cock's crest should fall all round. How can this be when it is driven back by an impudent-looking malformation of a comb? No, no; let us have all things in their right places, and as well might you recommend breeding Spanish fowls with topknots as Polands with combs.

I quite agree with a "POLAND FANCIER" as to the good laying qualities of the Poland tribe, but consider the Silver the best in that respect.—C. E. C.

FANCY RABBITS.

As I see that a few hints on Rabbits have been given in your paper, allow me, as a fancier of five years' standing, to give your correspondents who are fond of this amusing pastime a few words as to my experience.

Your paper of February 24th gave a very interesting description of the properties of Rabbits; but some of the statements I must be allowed to correct. First, "P. B." says the longest-eared Rabbit ever bred measured 22 inches in length, and 5½ inches in breadth. Two years ago I had one that measured 22¼ inches, and 5½ inches over; but it died about eight months ago from old age. Then, again, he states 9 lbs. to be the average weight. I have not a Rabbit in my hutches, except young ones, that weighs less than 10 lbs., and the highest is 15 lbs. I trust he will excuse these few remarks; but I merely give them to show that he is in error.

I keep my Rabbits in a stable I have had fitted up for the purpose, and have my hutches placed one over the other, slanting them backwards a little, so as to allow the water to run off. I never find that the under hutches suffer from those over them. I place them about four feet from the wall, and find it answer very well.

"VIGILANS" says, Rabbit-keepers do not wish to go to any expense in hutches. I quite agree with him; but still I should never think of putting a Rabbit in a tea-chest, much less a barrel. I have hutches that cost from 8s. to 25s. and 30s., and I can assure him that he will find Rabbits thrive a hundred times better in proper hutches. I have my hutches made of red deal, and some are partly made of oak; but I line the bottoms of them with a slab of slate, which I cover with sawdust, and keep them cleaned out every day.—AN EXHIBITOR OF PRIZE RABBITS.

PARROTS AND COCKATOOS BITING OFF THEIR FEATHERS.

IN answer to your correspondent who inquires, "What will prevent a Cockatoo from biting off its own feathers?" I unhesitatingly answer, *An unlimited supply of water.* I think for the sake of the poor birds this ought to be generally known, as even a great many dealers have a notion that Parrots do not require water. Some time ago I was with my wife looking over the collection of an eminent dealer here. Mrs. E. was very much astonished with the talking capabilities of a large, white, orange-crested Cockatoo. I objected to purchase the bird on account of the wretched state of its feathers, many of which were so closely bitten off that the stumps were bleeding. The dealer said it was only moulting, and would get all right again, so we made the purchase. The next day I was informed how the dealer congratulated himself upon having "taken in" Mrs. E., he having had the bird for some time, and in vain had tried all he knew to cure the Cockatoo destroying his plumage. My wife took care that the bird always had a good supply of water, the result of which is that the bird has become one of the finest of its species I ever saw.—W. J. E.

[The writer of this has sent us his name, and we have no doubt that his statement is correct. One of the greatest of barbarities attendant upon confining animals is depriving them of a free access to water. Dormice, rabbits, Guinea pigs, &c., should all have water at their command. It is absolutely needed by them.—ED. C. G.]

OUR LETTER BOX.

GOLDEN-EYED DIVER.—"Can any of your correspondents inform me where I can get a Golden-eyed Diver Drake? We have two Carolina Summer Ducks to spare, both of which were bred with us last year."—W. J. ETCHES, *Derby*.

MUSCOVY DUCK (Tyro).—The Muscovy Duck, although a favourite with many, we do not consider by any means profitable to keep. They are voracious eaters, and as a table bird are rank and strong. As a bird for the market they are very unsaleable. Hempseed, greaves, grains, &c., will all stimulate the system, and induce Ducks to lay.

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—April 28, 1857.

Advertisements.

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WEEKLY CALENDAR.

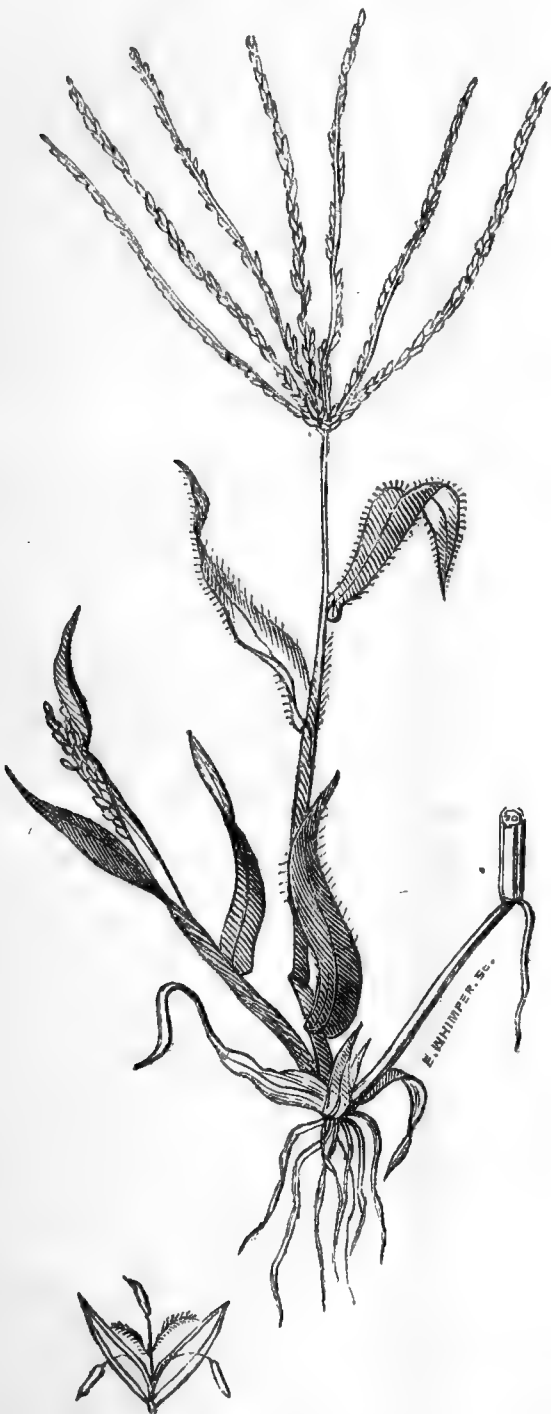
MAY. 5—11, 1857.			WEATHER NEAR LONDON IN 1856.					Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
D M	D W		Barometer.	Thermo.	Wind.	Rain in Inches.							
5	TU	Speedwell (Veronica).	30.172—30.044	53—35	N.E.	—	26 a. 4	27 a. 7	3 11	11	3 29	125	
6	W	Meadow Orchis (O. morio).	29.917—29.568	52—41	S.E.	24	24	28	3 20	12	3 34	126	
7	TH	Dwarf Orchis (O. ustulata).	29.609—29.409	44—39	N.	16	23	30	3 30	13	3 39	127	
8	F	Man Orchis (O. militaris).	30.115—29.792	49—41	N.	—	21	32	3 42	14	3 43	128	
9	S	Hand Orchis (O. latifolia).	30.151—30.099	54—43	N.E.	—	19	33	rises.	☉	3 46	129	
10	SUN	4 SUNDAY AFTER EASTER.	30.015—29.898	68—44	..	—	18	35	9 a 56	16	3 49	130	
11	M	Bird's-nest Orchis.	29.870—29.777	71—43	N.	—	16	36	11 3	17	3 51	131	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 61.9°, and 40.2°, respectively. The greatest heat, 81°, occurred on the 6th, in 1830; and the lowest cold, 21°, on the 8th, in 1855. During the period 106 days were fine, and on 90 rain fell.

ORNAMENTAL GRASSES.

DIGITARIA SANGUINALIS.

(COCKSFOOT FINGER GRASS.)



THIS is an annual, and a native of England, but it is very rare and very pretty. Its roots are fibrous. Stems numerous, reddish, sometimes branched, bent and resting on the ground near the base, and often striking root from the joint which touches the ground. The stems are about a foot high, usually four-jointed, leafy, marked with small streaks, smooth. Leaves about two inches long and a quarter of an inch broad, pointed, marked with small streaks, wavy, and very minutely saw-toothed at the edges, sprinkled, as are their long, rather swelling sheaths, with small warts, many of which bear bristly hairs. Flower-spikes varying in

number from three to eight, alternate, thread-shaped, spreading, about three inches long, crowded at the top of the stem, dark purple, or purple and green mixed, many-flowered. Stalk of each spike flat, wavy, winged, rough-edged, with a flat mid-rib at one side, the other side beset with two rows of unequally cloven, two-flowered, short, erect, partial flower-stalks, all growing in one direction. Flowers dark purple, erect, oblong oval. Calyx three-valved, permanent, largest valve usually five-ribbed, its edges rough, or downy, lowest valve very small and short. Stigmas and the anthers often violet-coloured. Valves of the corolla equal and smooth, the one receiving the other, having a small membrane at the base. Seeds very small, and inclosed by the glumes of the calyx as well as of the corolla. This Grass belongs to Triandria Digynia class and order of the Linnæan System.

This was known as a native Grass by the earliest of our writers upon plants, for Gerarde describes it as *Ischemum vulgare*, found near Queenhithe, in Kent. It has been detected in a few other parts of the British Islands, but being an annual it is not always found in the same place during two years successively. It has been gathered near Battersea, Surrey; near Martha's Chapel, Guildford; near Henham, between Beccles and Saxmundham, Suffolk; on Sunderland Ballast Hills; and Ray says, "In Justice Eves his pastures at Great Witchingham, seven miles from Norwich, towards Lynne; also plentifully in the ploughed fields about Elden, in Suffolk." In Ireland a few specimens have been found on the sand hills of Doagh, in the county of Clare.

Its names of *Digitaria* and *Finger Grass* refer to the finger-form flower-spikes; *Cocksfoot* has reference to the arrangement of those spikes; and *sanguinalis* alludes, it is said, to the practice boys have in Germany of causing a flow of blood by passing it up the nostrils of their playmates. It is quite as likely that it may refer to its old Greek name, for *Ischaimos* was stanching of blood; and Parkinson says, "Cockes-foot grasse, bruised and layd to any place that bleedeth, doth stay the blood presently, whether from the nose or wound." Sinclair states that it "produces much seed, of which birds are very fond, and requires to be protected by nets, or otherwise, during the time of ripening. The smaller birds pick out the ripe seed, even when only a small quantity is formed among the blossoms. Schreber informs us the seeds are not only collected from this

Grass, which is cultivated in some parts of Germany for the purpose, but likewise from the *Festuca fluitans*, flote-fescue. The common method of collecting and preparing the seeds is this:—At sunrise they are gathered or beaten into a hair-sieve from the dewy grass; are spread on a sheet, and dried for a fortnight in the sun; they are then gently beaten with a wooden pestle in a wooden trough or mortar, with straw laid between the seeds and the pestle, till the chaff comes off; they are then winnowed. After this they are again put into the trough or mortar in rows, with dried marigold flowers, apple, and hazel leaves, and pounded till they appear bright; they are then winnowed again, and, being made perfectly clean by this last process, are fit for use. The marigold leaves are added to give the seed a finer colour. A bushel of seed with the chaff yields only about two quarts of clean seed. When boiled with milk or wine it forms an extremely palatable food, and is in general made use of whole, in the manner of sago, to which it is, in most instances, preferred.

"The seed should be sown as soon as it is ripe in the autumn, that the young plants may have sufficient strength before the winter begins; by this mode of culture it will flower and ripen the seed much earlier than the time specified below; in that instance the seeds were sown in May.

"It delights most in a rich, light, siliceous soil. It flowers about the first week of August, and the seed is ripe in the middle of September."

A CORRESPONDENT has taken the trouble to reprint the following statement from the pages of a contemporary, and has sent it to us for our opinion:—

"Mrs. Hyacintha Carswell says she cannot make her seeds of annual plants grow; she has bought them of Carter, and of Wrench, and of Nash and Minier, and is equally unsuccessful in every case. Even Mignonette refuses to come at her bidding. And yet she spares no pains, actually employs the gardener of a neighbouring Viscount to sow the seeds for her, and herself takes care that no vile slug or other molluscous forager sucks them up. Being a great admirer of Mrs. Loudon's 'Book of Annuals,' she is eager to watch and nurse all the pretty things that adorn the pages of that charming picture book. And then comes a postscript correcting the first statement by announcing that Clarkias and Collinsias and Godetias do come up—a circumstance she had forgotten to mention.

"We are not surprised at the horticultural misfortunes that have overtaken Mrs. Hyacintha, especially when we look at the advice given to amateurs by some of our gardening friends, who take infinite pains to explain what needs no explanation, and to omit exactly that which is the essential thing to know. Before roasting a hare it is necessary to catch it; before thinning, and manuring at the very moment of projection, and tying plants neatly to sticks or bits of bushes, it is necessary to make the seeds grow. How to do it is a question which great gardeners can answer, but sorely puzzles little ones.

"Shall we be believed when we say that it is a mere affair of temperature? Or rather, can any one doubt it? The seeds that will not grow come from countries in which the earth is far warmer than here; Mignonette, for instance, from the N. of Africa, Cenias and Aretotids from the Cape of Good Hope, Rhodanthes and Helichrysums from New Holland, in all which countries the earth is more heated

than with us. Seeds cannot grow unless they are submitted to a certain amount of warmth, below which they die after a few weeks' exposure. In this respect they are like eggs, which are addled if kept in an unnaturally low temperature. Now, the month of April, or even the end of March, is seized upon by eager amateurs as the time at which to sow their annual seeds. But the mean temperature of the surface soil near London in March may be taken, in round numbers, to be as low as 41 degrees, and in all April as 46½ degrees; the temperature of the corresponding months in North Africa, the Cape, or Australia, is, however, at least 10 degrees higher, an enormous difference in its effect upon plants; and such an amount of warmth is not gained in this country before the end of May at the soonest. It is no wonder, then, that the tender seeds of the warm parts of the world should perish when thrown too early upon the chilly soil of this northern region. If our fair complainant will moderate her zeal, and wait with patience till May before she begins seed-sowing, she will find her Mignonette, as well as her other delicate flower-seeds springing up willingly enough, and she will no longer complain of her seedsmen, who are in no way to be blamed. The mere fact of her Clarkias, and Collinsias, and Godetias coming up where other seeds perish as we say, wont grow as Mrs. Hyacintha thinks, is a proof of the truth of the explanation we have given. They grow because they come from a climate like our own, and the cold that kills other seeds is congenial to them.

"It excites no surprise in us that a Cocoa-nut will not grow if planted in a flower border; astonishment is reserved for more familiar plants. And yet there is no reason whatsoever why the Cocoa-nut should not shoot as well as the Acorn, except that greatest of all reasons, namely, that the earth is never warm enough to excite its vital forces into activity."

The writer of these assertions has assumed the experience of "great gardeners" without bringing such experience to bear on the question submitted to him. Great gardeners know that cold does no harm to seeds as long as they lie dormant in the ground. That seeds of tender exotic plants can bear many degrees of frost with impunity is well known to most gardeners, great and small. After a very severe winter most of our garden annuals which shed their seeds in the autumn will appear late in the spring if the ground has not been disturbed, but during a mild winter many of them will germinate, and perish immediately on the first change to cold or frost. No degree of frost known in these latitudes affects the seed of Mignonette if it lies in drained land. The seeds of the Indian Balsam known as *glandulifera*, a very tender plant, are more tenacious of life than Mignonette, for we see their produce springing up on all kinds of unfavourable soils after the severest winters. The so-called China Asters are equally exempt from the effects of cold; the Portulaccas, the blue Lobelias, and even seeds of the *Mesembryanthemum tricolor* we have known to vegetate most freely after lying on the surface of the borders and on the gravel walks from September till May. From these facts, which others can easily multiply from their own experience, it may be known that we have no faith in the theory which teaches that more cold is in any degree injurious to the seeds of garden annuals.

From other and very different causes arises the failure of our hardy annuals. "Spring brings the seedlings forth with many smiles, but once delivered kills them with a frown." This is as true as poetical, for severe frosts kill many such juveniles. There are, however,

two other much more usual causes of disappointment—bad seed and too deep sowing.

We should not have devoted so much space to this subject, because no one who has any knowledge of practical gardening would be misled by such baseless theorising; but we insert it to warn amateurs less skilled, and because our correspondent asks, "Is this the kind of doctrine which the revived Horticultural Society is prepared to teach?" Such doctrine is *not* fathered by the Society, and the head which compounded such doctrine would not have ventured to utter it within the Society's lecture room.

DISBUDDING TRAINED FRUIT TREES.

HAVING received certain applications for advice on the subject of disbudding fruit trees, and it being an affair of a seasonable character, I proceed to give a few remarks; and, in order to understand the subject more fully, let us examine the reasons for this procedure, when it should be performed, its results, &c.

The reasons for it are found in the fact that trained trees, especially on walls or fences, produce much more young spray in the spring than is consistent with the ultimate welfare of the trees, offering serious impediments to the free admission of light, &c. Moreover, in healthy trees very generally certain gross shoots, termed "robbers," sprout forth from various parts of the trees, especially from any portions where a sudden bend through training occurs. As to the time for disbudding, that is, of course, as soon as the sprouts termed "robbers" can be thoroughly distinguished, and the spray necessary to be retained determined on. I generally commence about the second week in May, but much depends on the season as to earliness. The results of judicious disbudding are: 1. The admission of more light to the more fruitful portions of the tree; 2. A more perfect equalisation or distribution of the sap; and 3. A wholesome check on a too powerful root action, for wherever there is a luxuriant and profuse growth there will soon be a corresponding increase in the volume and activity of the roots; and although it is well to encourage a somewhat liberal root action, yet a disproportionate amount is only productive of superfluous spray, highly inimical to fruiting conditions. It must, therefore, be understood by learners that there is sure to be a reciprocity between root and branches sooner or later. A thorough appreciation of this fact constitutes the basis of many of our operations.

THE PEACH.—Before proceeding in detail let me observe that this operation should never be performed at once; it is too severe as to the functions of the tree, and in some fruits paralyses their energies for some weeks. The Peach and Nectarine are easily damaged this way, being very susceptible of sudden innovations on their habits. As soon as the young fruit begins to swell on the Peach and Nectarine, if free-growing and healthy trees, these robbers begin to appear, and also a superabundance of young shoots of a proper character. With regard to the latter a selection will have to be made in due time. The robbers, however, must be stripped away betimes, unless so situated as to be necessary to be retained for completing the form and extension of the tree, in which case they should simply be pinched when about five inches in length. These robbers may be readily distinguished from the true or fruitful shoots by their excessive luxuriance, for they are well marked in this respect. In the first disbudding of the Peach the attention may be directed to the leading points all over

the tree. Here it will be found that the second and third buds are too close on the leader. These may be at once rubbed away. The eye must then be directed to the rest of the shoots, and those found to be crowding superior spray either pinched or entirely removed—the former if any doubts exist. It is well for beginners to pinch or stop liberally, but to remove spray entirely with caution. An unpractised eye is apt to be puzzled, and moreover, any that are pinched, if found at subsequent disbuddings to be superfluous, may then be entirely removed.

At the first disbudding about one-third of the aggregate amount supposed to require removal may be stripped or pinched; at a second disbudding another third may give way, and so on with the next. The final operation may be made as late as the second week in June or thereabouts, when it will become the pruner's duty to remove totally all spray of a doubtful character, and many of those which had been pinched to stand over for awhile. I may here fairly state that there are those who have an impression that it would not be bad practice to pinch back all superfluous shoots instead of stripping them away. No less a personage than my friend Mr. Fleming, of Trentham, I think, once urged this on me, and certainly whatever comes from such a quarter deserves the highest consideration. Mr. F. assured me that he had obtained larger fruit from such than from leading shoots. I am of opinion that such practice might prove of service in the warmer counties of England and in Peach houses, but for our colder counties I should much doubt the practice out of doors. The trees, under the least neglect or omissions, would become like a dubbed hedge, and the result would scarcely fall in right with that fundamental principle of Peach culture, the ripening of the wood.

I find that I have omitted one thing in its place. I ought to have advised that all foreright and back shoots be rubbed from the Peaches and Nectarines in the first operation. In former days almost all the advice given about disbudding was this: "Disbud all foreright shoots." This was a stereotyped affair, and long passed as the chief advice concerning disbudding. In later days, however, it has been discovered that a clever cultivator of the Peach does not desire one shoot more left on his trees than is requisite until the winter pruning.

R. ERRINGTON.

(To be continued.)

WINDOW GARDENING FOR SPRING.

(Continued from page 49.)

THERE is an old proverb that if a thing is worth doing at all it is worth doing well, especially when the doing it well is just as easily done as doing it badly. Whatever the size of the pots we fix upon (four and six-inch pots are the best for window gardeners), and seeing that they are clean, the first thing to be done is to fill the pots for at least one-third with drainage, deducting half an inch, or from that to one inch, from the rim of the pot, above which the soil is not to rise. We divide the space between that and the drainage into three equal parts, or as near as may be readily guessed at. The first part, next the drainage, we fill with lumpy, fibry soil, from which the fine, dusty matter has been excluded; the middle part is filled with material finer but coarse, and containing more sand; and the upper part is the finest and lightest of all. It is just as easy to fill a dozen or a hundred pots in this way, and thus secure drainage and a proper moist condition in the soil, as to put a single oyster-shell in the bottom, and then stuff the pot with whatever soil comes handiest, as I saw done not long ago. The pots being thus filled, they are either well watered or set in a tub of clean water just up to their rims for ten minutes. The object is to have every part of soil thoroughly moistened. The pots are then allowed to drain for twenty-four or forty-eight hours in a dry, shady place, by which time the surface

will be getting nicely haseled, as it is called, as respects dryness. If the surface is not level it is made so with a round board formed on purpose, with a nail placed in its upper side as a handle. The seeds are then sown and covered with a thickness of dryish soil in proportion to the size of the seeds, which soil is again pressed lightly over them; a square of glass is placed over the pot, and it is set in the window; and if the sort is tender, or the seeds are very small, a piece of paper is laid on the glass to shade it. For such small seeds as the *Lobelia* and *Calceolaria* a slight surfacing of dry silver sand is best; for such seeds as *Mignonette* more covering of fine material, as dryish earth, would be required; for such seeds as a *Balsam* the one-tenth of an inch would be required, whilst for a *Convolvulus* the one-fourth of an inch might be used.

This plan, useful in all cases, is especially applicable to all kinds of small seeds. The seed absorbs moisture gradually; there is a storehouse beneath it upon which it can draw without frequent obligations to the water-pail, which is the innocent cause of sending so many seedlings to their death; and as the square of glass, while permitting the entrance of a sufficiency of air, to a great extent prevents free evaporation of moisture, the soil beneath the seed is a long time in parting with its moisture, and the young roots are kept in a nice regular condition. Some amateurs who have followed this plan, and been very successful in getting up fine batches of seedlings, have told me that their troubles began when they were obliged to water, as then their nice seedlings damped and shanked off close to the surface of the soil, especially when the seedlings were very thick. In the latter case, thinning or even pricking them out with a small dibber in little patches an inch apart in similarly-prepared pots, to be singled out afterwards, would be a good remedy. I have a horror of watering all such seed-pots carelessly from a rose. I can hardly tell how it does such injury, but that it does so frequently there can be no question. It is better to flood the pot gently by pouring the water from the spout on to a piece of broken pot placed against the side of the pot; or, better still, placing the pot in a pail of water up to the rim until thoroughly moistened. I have often tried similar seed-pots by the dipping and the watering mode; and whilst I have scarcely had a casualty from the dipping, I have had many from watering overhead with a rose.

It is, I hope, understood that the pane of glass is to be kept over the pot closely until the seedlings appear; afterwards it must be edged up on one side to give more air, and ultimately be removed. I have mentioned squares of glass because pieces to suit such pots can be so easily procured, and by turning them there is little danger of damping the seedlings from the condensed drops of moisture falling upon them, as is likely to be the case with bellglasses of the common flat-headed kind unless they are frequently wiped dry inside. Were the expense of a few bellglasses no object (and a few shillings will get a good stock), we should prefer them if made conical—that is, rising to a sharp point in the middle—as then there would be less occasion still for watering small seedlings, as, if their edge was within the pot's rim, the moisture that was raised as vapour during the day would be condensed against the sides of the glass, and trickle down again, and moisten the soil without falling in drops over the young plants.

This equable state of moisture, so desirable in many cases of tender seedlings, may also be secured by using a rather porous pot for a seed-pot, and then packing that in a pot a size larger, and filling up between with moss kept in a damp state. My first attempt to give bottom heat to seedlings and cuttings on my own account was made in a window by using two pots in the above manner, the space between being filled with sawdust, and kept moist and warmish by dropping on it warm water, and allowing a little to stand in the saucer which held the outer pot.

I have seen several attempts to secure a moist atmosphere and warmth for seedlings and cuttings in windows by various modifications of the handglass principle, set upon a frame, on which the pots might stand. I had seriously thought of recommending for the proprietors of many of our pretty parlour windows a *Liliputian* greenhouse, set upon a neat table, only the top was to be iron instead of wood, and the drawer beneath it was to be lined with zinc, but

the outside wood in the usual way, with conveniences for filling this drawer with hot water from the kitchen copper, and removing it when cold at pleasure; but I now gladly give any one the right to make a fortune from such an idea, though entertaining no doubt of its answering well, as the *Waltonian* case, with fair attendance, would answer quite as well, and may be obtained all complete without the bother of planning and engineering. Than such a case I know of nothing likely to be more interesting to an invalid who cannot garden out of doors. A full description and plan will be found at page 429, Vol. XV., by Mr. Beaton; and, though I have not seen one, I feel confident that the case will answer well, and look nice as an article of furniture. The principle is just the same as our table-drawer stand, only more elaborated, the tin drawer or boiler standing quite free of the platform and sides, and being heated by tin tubes passing through it from the flame of a lamp or a gas jet, while the heat from the lamp passes also round the little boiler. A tube also rises from the little boiler into the flame, so as to communicate moist vapour at will. Those who try the simpler table-drawer plan may have plenty of vapour from a similar means, or by merely sprinkling the zinc bottom when the water beneath is warm. Mr. Beaton says that the best size for such a case is thirty-four inches long, seventeen inches wide, thirteen inches deep at front, and eighteen inches at the back, all inside measure; and the reason why such a size is best he also tells us, for he never makes a statement without giving us the why and the wherefore. Such a box will hold three rows of No. 48 pots, and six pots in a row, or four rows of No. 60, and eight pots in the row.

I may here conclude with two remarks; first, that when using such a case—and we hope Mr. West, of Surbiton, will have many orders—care must be taken that the plants are gradually inured to the open window by protecting and shading a little at first when removed from the case. A cool case, with the top moveable in pieces, would be useful, and, in default of this, bellglasses and funnels of tissue paper will be handy. The second is, that in addition to old seeds and small seeds, which I have adverted to, it may be necessary to state that such hard seeds as *Acacias* and *Indian Shots* will vegetate all the sooner if immersed in water for some hours at a temperature of 90°, or if a part of the hard shell is filed off previously to sowing them.

The following seeds of plants may be tried where there is room, and may be easily procured from the seedsman at a very moderate price:—

1. Plants of a shrubby nature which will do for windows:—*Acacia armata*, *grandis*, and *Drummondii*; *Cassia corymbosa*; *Coronilla glauca*; *Cytisus proliferus* and *Attleana*; *Dolichos lignosus*, a climber; *Ericas* of sorts; *Fuchsias* of sorts; *Jasminum odoratum*; *Kennedyia rubicunda*, a trailer; *Passiflora cærulea*; *Sollya heterophylla*.

2. Plants partaking of a herbaceous character that will bloom in the autumn, or may be kept on for the following year:—*Alonsoa incisifolia*, *Anomatheca cruenta*, *Calceolaria*, *Cineraria*, *Chrysanthemum Indicum*, *Campanula pyramidalis* and *nobilis*; *Cobæa scandens*, strong climber; *Commelina cœlestis*; *Cuphea platycentra* and *miniata*; *Gazania rigens*, *Gladiolus*, *Liliums*, *Maurandias* of sorts and colours; *Mimulus*, ditto; *Nierembergia gracilis*, *filicaulis*, and *intermedia*; *Oxalis rosea*; *Pelargoniums*; *Salvia coccinea*, *patens*, &c.; *Schizanthus Grahmi*, &c.; *Sparaxis tricolor*; *Tigridia pavonia*, &c.

3. Small annuals suitable for window decoration in summer and autumn:—*Anagallis Phillipsii* and *Menelli*; *Balsams*; *Cockscombs*, if bottom heat can be given; *Calandrinia grandiflora*; *Clintonia elegans* and *pulchella*; *Didiscus cærulea*; *Isotoma axillaris*; *Linum grandiflorum*; *Lobelia speciosa*, old; ditto new, *ramosa*; *Mesembryanthemum glabrum*, *tricolor*, and *lineare*; *Portulacca* of sorts; *Rhodanthe Manglesii*; *Acroclinium roseum*; and here we may place *Primula Sinensis fimbriata*, though properly it should have been in the last section, as it will not be expected to bloom until autumn and winter.

4. Annuals that will bloom well in the balcony and flower garden if planted out in May:—*Abronia umbellata*; *Ammobium alatum*; *Antirrhinums*; *Argemone grandiflora*; *Aster*, Chinese, French, and German; *Bartonia aurea*; *Brachycome Iberidifolia*; *Calliopsis Drummondii*; *Datura*

ceratocaulon; Dianthus, Indian Pink; Picotees and Carnations if sown early; Eschscholtzia tenuifolia; Helichrysum of sorts; Ipomæas or Convolvulus; Lupinus mutabilis, &c.; Lobelia as under section 3; Myosotis Azoricus; Nolana atriplicifolia; Pentstemons; Petunias; Phlox Drummondii; Salpiglossis; Saponaria Calabrica; Sanvitalia procumbens; Sedums; Stocks; Tagetes lucida, patula, and erecta (the last two French and African Marigolds); Tropæolum peregrinum, tricolor, and Hookerianum; Verbenas; Zinnias of the elegans group.

We saw last year some well-stocked balconies and small flower gardens supplied chiefly with plants as in the last two sections, raised entirely in windows, sown mostly in the first week of April, and either covered with glass or thin bleached calico; and as soon as they were fairly up, and before they became elongated and tender by the heat of the room, they were first moved to a colder room, and then were set close to the wall out of doors, and protected for some time at first with a sheet of calico stretched on a frame. As pretty, stubby, shrubby Balsams as I ever looked on were sown in a window, pricked out and potted off in a window, and, after having the benefit of the inside until June, were turned out on the balcony as a speaking rebuke to many of the weak, lanky things that frequently grace the shelves of a greenhouse.

R. FISH.

(To be continued.)

FLORISTS' FLOWERS.

(Continued from page 51.)

THE VERBENA.

I now proceed with my lists of new and old varieties. Those marked with an asterisk are the best for pot culture. I have not so marked any of the new sorts except *Scarlet Gem*, because as yet their fitness for such a purpose has not been ascertained sufficiently correctly.

TWELVE NEW VERBENAS.

1. *Attraction* (Edmonds).—Bright ruby crimson, with large lemon eye, fine truss, and good habit.
2. *Crimson King* (Edmonds).—Deep glowing crimson; bright lemon eye; said to be an excellent bedding variety.
3. *Celestial* (Edmonds).—Pale rose, with a very large truss. Makes a good change on a stand of cut flowers.
4. *Emperor* (Bouchariat).—A continental variety, with bright crimson flowers, deep violet centre, and a large truss.
5. *Evening Star* (Edmonds).—Bright carmine, with a clear, distinct yellow eye; likely to be a good bedder, it blooms so freely.
6. *Gloire de Saint Etienne* (Chauvière).—Raised in France. Orange scarlet, with a pure, large white centre; a distinct and striking variety.
7. *Prince of Wales* (Edmonds).—Bright ruby crimson, shaded, and a large lemon-coloured eye; habit excellent; a fine variety.
8. *Prince of Oude* (Edmonds).—Dark purple, with white centre; good habit and form, and a large truss; distinct and fine.
9. *Rosy Gem* (Edmonds).—Brilliant deep rose; a great acquisition in that colour; will no doubt prove a good bedder.
10. **Scarlet Gem* (Weatherill).—Intense orange scarlet, with crimson eye; well-formed blooms; a good truss and habit.
11. *Sir Joseph Paxton* (Edmonds).—Light rosy crimson, with large lemon eye; good form and habit; a fine variety.
12. *Sims Reeves* (Edmonds).—Rich crimson purple, with a large, bold white eye; good form; distinct and fine.

SEVENTEEN OLDER VARIETIES.

1. *Admiral* (Thomson).—Crimson scarlet, with a good truss.

2. **Amandine* (Luther).—Blush white, with crimson eye; distinct.

3. **General Simpson* (Todman).—Soft carmine; new colour; distinct and fine.

4. **Géant des Batailles*.—Deep crimson; dark centre; extra fine. Raiser's name unknown.

5. **Gloire de France* (Chauvière).—Salmon pink; a distinct and novel colour; form excellent.

6. *Jacquinita*.—Rich maroon, with white eye; good form and large truss; extra fine.

7. *King of Roses* (Weatherill).—Mottled rose; fine truss and good form. Useful for pot purposes. Distinct and fine.

8. **Le Gondolier*.—Soft rosy carmine; a distinct delicate colour; large truss and good form.

9. **Loveliness* (Edmonds).—Bright rosy pink; large truss; dwarf, close habit. Very valuable for bedding.

10. **Madame Plantamour* (Bouchariat).—Pale rose; dark eye, good form, and large truss. Excellent for either pot or bedding purposes.

11. **Mrs. Halford*.—Large waxy-white truss; will supersede all other whites when better known.

12. *Miss Trotter*.—Brilliant scarlet, dwarf habit, and most prodigious bloomer, continuing very late in the autumn. When more common it will be in universal demand.

13. **Noël*.—Bright scarlet; dark edge; fine.

14. *Purple King* (Reeves).—A well-known, good, purple, dwarf variety.

15. *Pre-eminent* (Edmonds).—Glowing rosy scarlet, with white eye encircled with crimson; very good.

16. **Standard Bearer* (Edmonds).—Rich blue purple; large white centre; good.

17. *Victory* (Edmonds).—Bright rosy lilac; large white eye; very distinct, and most excellent.

T. APPLEBY.

A MILD SPRING NOT WITHOUT ITS EVILS.

AMONGST the benefits which a mild, open spring confers upon us there are many drawbacks. On the other hand, a cold, severe spring is not altogether devoid of something beneficial to one class of vegetation or another. The nature or well-being of plants in England requires a certain amount of cold, frosty weather in winter, in order to maintain that balance which is so necessary for the welfare of what is most useful. For instance, let us take a glance at the results of the present season, which is a fair example of a mild spring. It is scarcely necessary to say that winter set in rather early with us. A sharp frost set in the last day of November, and by the 4th of December ice was nearly three inches thick. Milder weather followed, carrying us through to the last week in January, when a few more days' frost presented us with ice about the same thickness as the first. A slight sprinkling of snow accompanied each of these frosts, and some rain during December and January, but no heavy floods. February set in mild and dry, so much so that the dust was often blowing on exposed places on the roads, and the whole rain that fell during the month was about a quarter of an inch. March was much the same, with, however, more rain, especially in the last week, which swelled the quantity that fell to upwards of one inch; but the frosts were few, and not at all severe, and the hazy showers and mild atmosphere we have had in April up to the present time, the 6th, have been more of the kind we look and wish for in May. Nevertheless, with all these advantages, vegetation has made little progress, and is little further advanced at the present time than is usual, while there has been great difficulty in getting small seedling plants saved from the many enemies they have had to encounter. Even plants of a robust growth have fallen a victim to the

enemies they have met with. *Peas* sown in autumn have been saved through the cold weather to be devoured by voracious insects and other enemies, which the absence of severe weather later in the winter tended to encourage, while all smaller seeds have suffered very much, and in many instances will have to be sown again, and that, probably, under circumstances less favourable than before, in so far as the manipulation is concerned; for it is not unlikely but we may have a succession of cold rains, or slight frosts after rains, which will render the ground extremely unpleasant to work upon. Added to this, there is a fear that some sharp frosts are in store for us at the time when the mass of our orchard fruits are in blossom, which may destroy all our hopes that way; but even if this should prove a groundless alarm, still there is almost a certainty that insects of various kinds will abound, to the destruction of young plants just vegetating, or, it may be, of trees blooming or fruit setting; for a mild spring is always prolific of animal life, which must have a subsistence somewhere, and very often they select plants which we cannot well spare: hence their destruction; while a late spring frost is equally fatal with fruit-tree blossoms when their flowers are enticed out before their usual time by the general mildness of the season, and as frosts are always most destructive when preceded by rain, which is the usual accompaniment of a mild spring. Cold, dry winds are less fatal than frosts, or even when the latter do accompany them the damage is comparatively small to what it would be if the air, foliage, and everything else were loaded with moisture. I have had *Apricot* and other trees in blossom withstand 15° of frost when the air was very dry, while the half of that will often kill them when accompanied by rain. Cold, dry, east or north-east winds are also beneficial fertilisers of the ground, which, being dug up roughly, is searched through by it, and make it work well when rain does come. It is true that the cold, withering winds are at variance with tender seeds vegetating. Even large, robust-growing ones, as corn, Beans, and Peas, do not always vegetate in a satisfactory manner; but if they do get above ground they have fewer enemies to contend against than they would if their vegetation was assisted by the kindly spring showers, which have obtained a sort of poetic character amongst us—a commendation more applicable next month than this.

The above remarks are made with a view of guarding the inexperienced against being deceived by the unseasonable mildness of the weather with which we are often visited at this season, and probably may be during this month, enticing people to plant out tender, delicate plants before their proper time. It is also not unusual in such cases to attribute the failure of the crops to the seeds, which may perhaps be as good as can be, and may have produced a crop, seen only by those having sharper eyes than we have. Crops of *Carrots* are often annihilated this way. *Lettuce*, *Cauliflower*, and almost all small seedlings are similarly destroyed. *Dwarf Kidney* and *Scarlet Runner Beans* are not proof against the attacks of these pests to gardening, and annual flower-seeds of most kinds fall a victim to their depredations. That several of these things suffer in a dry, cold season as well I will not deny, and if it be very dry many seeds will not germinate at all; but my purpose here is to show that the mild, apparently fine-growing weather we have at the time I write is fraught with more mischief than is generally supposed, and, though the ground is not soddened with rain, it is cold, and only such plants make any progress as are little affected by the cold. Grass certainly grows, and robust crops, as Beans, Peas, and the whole of the over-year's crop of Greens, Broccoli, &c., keeps pace with the times; but small crops do not get on so well, and I have not seen a good plot of early Peas this season. The ravages of insects and other

misshaps have miserably thinned the rows of the first crop, while the second and after crops are in many cases much injured as well. Remedies or preventives for such disasters are far from effective in all cases. The time has not yet arrived for that rapid vegetation which speedily outgrows common evils. Hence the difficulty in saving small plants in seed-leaf from the repeated attacks of their most inveterate foes. Good dustings over with lime, soot, wood ashes, and in some cases sulphur, will be effective for a time, but must be repeated, and, unless the plant grows also during the time of its application, the remedy will be inoperative; for a continuous coating of fine, powdery matter on delicate leaves will clog them up to their entire destruction. Hence the frequent complaints we hear that such and such a crop is gone, in spite of the many, perhaps daily, dressings it has had. Alas! the functions of the poor little plants are sealed up by the sticky matter with which they are encased, and the bulk, if not the whole of them become victims to the treatment.

When there is reason to suppose that a young brood is likely to be attacked in the manner described it is a good practice to sprinkle the beds pretty thickly over with lime and soot a few days after sowing the seed, or just a day or two before the young plants vegetate, and not to wait until you can see some of them, as it is likely a good many of them may be gone by then. A good dressing at that time will render the ground less palatable to the locomotion of all crawling insects, and by its being so before the germination of the seeds the cotyledons of the plants are not injured by it. After-dressings may be given; but a daily dusting and damping, accompanied by cold, wet weather, will usually lead to results as fatal as if they were devoured by the insects.

In the case of *Carrots* and some other crops it would be better not to sow too early in a moist season, as the delicate young plant is unable to stand against the attacks of its enemies, while with ordinary care there is usually sufficient summer to perfect the crop. Early crops of other things must, however, be protected in some way as above, and may be had in sufficient quantities to meet the requirements of the family.

Of the fruitfulness of the ensuing summer I am not sufficiently vested with the gifts of prophecy to speak; but those who pretend to have a foreknowledge that way argue the probability of an abundant orchard-fruit season. *Apples*, *Pears*, and *Cherries*, they tell us, will be as plentiful as they were scarce last year, while small fruits may be expected about as usual. What little I have seen of them has certainly not led me to expect a heavy *Gooseberry* crop; but it may be an average one, and *Currants* may be good. *Wall fruits* in general look well, and *orchard fruits* show plenty of bloom; but during the last few years the white silver moss on the trees has made rapid strides. Many comparatively young trees now look aged, and evidently are fast hastening to a premature decay. In another paper I will explain the means I have taken to arrest this evil. In the meantime let us hope that the fruit crop of 1857 may be a tolerably plentiful one. To wish for an extraordinary one would be almost inviting the scarcity of 1856 in 1858, as we seldom see two heavy crops in succession, although two or more indifferent ones often fall together.

J. ROBSON.

A VERY GOOD RECEIPT FOR PICKLING A HAM OF TWELVE POUNDS WEIGHT.—Take salt petre, $\frac{1}{2}$ oz.; ground pepper, $\frac{1}{2}$ oz.; treacle, $\frac{1}{2}$ lb.; common salt, 1 lb. Rub the ham all over every day for a month, and then add Cambrian essence, 1 oz. Rub again for another fortnight; then take it out of the pickle, and send it to the baker to dry, not to smoke.

NEW BOOK.

THE VEGETABLE KINGDOM.*—One of the most desirable objects to be kept in view by the author of any elementary work on science is to divest it as much as possible of the dry technicalities and jargons of its definitions and descriptions. We are quite aware that to do this is very difficult, and to some minds it is an impossibility. Many of the most celebrated of our men of science—men the deepest skilled, most learned, and most practised—never could explain themselves popularly, never could place before a pupil in familiar language the knowledge they wished to impart. Others, on the other hand, can detail the most abstruse facts and doctrines of science in the plainest household words, and write them down, as it were, with a sunbeam. Among the latter we say, without any fear of contradiction, is the author of the work now under notice. Most persons who have ever thought about the botanical arrangement of plants have considered the Natural System as far too difficult to be acquired by any one unable to devote his life to the study. Such opinion was justified by the dry husks with which they overwhelmed that study, and its best refutation is in this work by Mr. Hogg. Where a familiar word could be used it is used; the arrangement adopted is the most unexceptionable; the descriptions of the different orders are clear and simple; the illustrations are excellent and numerous, and the notes upon each are copious, useful, and highly interesting.

We are glad to see from the advertisement that a work capable of so much utility is being published, in weekly numbers, at a price which brings it within the reach of every one. We shall recur to it next week, and will then publish some extracts and specimens of the illustrations.

DOODIA ASPERA RAISED FROM OLD SPORES.

As I only receive your invaluable publication monthly I did not see what you stated respecting the Fern *Doodia aspera* till the beginning of this month. I immediately communicated with the young lady from whom I had the piece of frond, who told me that this, among a lot of other Ferns, was brought from India seven or eight years ago, and was, with the others, arranged between the leaves of a book. As soon as I received the piece of frond (it was not more than one inch square) I sowed the seed in a pot, and covered it with a glass, and plunged the pot over a hot-water tank. The glass was not once removed till the young seedlings were fit to transplant, which was about six months after sowing. Occasionally, when the top of the pot appeared a little dry, I watered over the glass, the soil being thus kept moist by capillary attraction. I pricked out about thirty of the small Ferns, and threw the remainder away. Not a single other Fern came up among the Doodias, although there are several kept in the same stove that shed their seeds, which vegetate in every direction, as well in the pots among other plants as in the crevices of the walls. There was no plant of *Doodia* in the house nor in the neighbourhood. I think I can safely say there was not one within a hundred miles. At all events I can positively assert that there was not one within thirty miles from where the seedlings grew.—A VERY OLD SUBSCRIBER.

POWER OF BEES TO PRODUCE HEAT.

SOME few months ago I reported in *THE COTTAGE GARDENER*, under the head of the Power of Bees to Generate Heat, a circumstance which occurred in my apiary on the 1st of December, 1856, and ventured to theorise thereon. The Editor suggested the propriety of bringing my opinion to the test of experiment, which I attempted to do by fixing, as was suggested, a thermometer in one of my hives. The results I purpose now to give, premising that, although I can scarcely say I have obtained that which I sought for

without throwing myself open to the charge of jumping hastily at conclusions, yet I have obtained proof somewhat calculated to confirm that opinion—evidence that it is not altogether an erroneous opinion.

The thermometer was placed in the hive (a straw one) on Christmas day, and the observations carried on until the 16th of February, 1857, during which period I, perhaps selfishly, exceedingly longed for 19° or 22° of frost, without which my theory could not be accurately tested. In this desire, it will be seen, I was not indulged, as it will be noticed below that the greatest cold experienced here during the afore-mentioned interval was considerably less than that.

From December 25th to the 31st inclusive the average temperature outside the bee-house was, dropping fractions, 31°, within the hive 45°, excess 14°; from January 1st to January 31st, outside 35°, inside 51°, excess 16°; from February 1st to 16th, outside 37°, inside 55°, excess 18°. On the 18th February the inside temperature rose to 70°, and ever since has ranged between that and 80°. That which I consider as being confirmatory of my opinion now follows. It occurred on the 4th and 5th January. The observations of these days stand in my note-book thus:—

4th.	8 a.m.	outside	34°	inside	43°
	4 p.m.	"	31	"	43
	9 "	"	30	"	40
	11 "	"	27	"	42
5th.	8 a.m.	"	26	"	44
	4 p.m.	"	30	"	44
	11 "	"	28	"	44

This is the only time the temperature of the hive descended so low, and any further descent the bees seem immediately to have checked, as it will be observed that, although the external air became colder, the internal air increased in heat. The greatest cold experienced here during the preceding period occurred at 8 a.m. on the 27th December and 29th January, the thermometer outside showing in both cases 18°. On the first date in the hive it showed 47°; on the latter 43°. The lowest in the hive, as before stated, was 40°; the highest 94° at 2 p.m. on the 26th January. The two thermometers never at the same moment indicated the same temperature, but they were on two occasions within 3° of each other:—

January 2,	outside	41°	inside	47°.
17,	"	46	"	49

That the foregoing thermometrical observations will not be devoid of interest to some of your apiarian readers is my belief; it is my hope, also, that they may induce some of them to bring forth from the treasury of their experience facts calculated to prove or disprove the theory I formerly propounded touching the sagacity the bees manifest in shaking their torpor off, and disseminating a genial warmth throughout their domicile in seasons of intense external cold.

Allow me, before closing this paper, to express how delighted I shall be to see the "British Apiarian Society" duly formed and established. A society of the kind indicated is what we apiarians want, and what I have long wished to see set a-going, and I hope, with your assistance, such will soon be the case. Such a society formed, its members maintaining a frank and ingenuous correspondence with each other, either publicly or privately, readily undertaking comparative experiments for the solution of any difficulty connected with the physiology of the insect, or even, as you say, with the "view of determining the relative merits of hives," must undoubtedly lead to the rectifying of much error, and to the profitable management of this most interesting insect.—D. G. M'LELLAN.

GROWING WINTER LETTUCES UNDER BELLGLASSES.

I BEG to place before the readers of *THE COTTAGE GARDENER* a brief note on raising Lettuces under *cloches* (bellglasses).

I called the other day at Withington Hall, the seat of J. Gegg, Esq., situated six miles from Macclesfield, and I was

* *A Natural History of the Vegetable Kingdom and its Products.* By Robert Hogg, Esq., author of "British Pomology," &c. W. Kent and Co., London.

greatly astonished at the fine Lettuces they are now cutting, and have been cutting this month past. These were grown under *cloches*.

I have never seen any so fine before, even in the London markets, at this season, and I can assure you that Lettuces cannot be produced better in the summer season.

The seed, I believe, is bought in France, and is of a variety called *Moreen*. The plants had received no protection, with the exception of a little loose litter to keep the frost out of the ground, and to retain the moisture from the present prevailing winds. The aspect chosen is a warm south border, and the *cloches* are placed parallel to the wall.—JOHN ROYLE, Gardener to Lord Stanley, Alderley Park.

CALCEOLARIA HYSSOPIFOLIA.



A SPECIMEN of this species was sent by J. Anderson, Esq., of Maryfield, under the name of *C. lavandulifolia*, which is a different plant, with the following memorandum:—

“Dr. Jamieson describes this as perhaps the handsomest we have. It grows on pastures above the level of Quito, say at 10,000 feet. It is truly an elegant shrub, about two feet high, and throws its panicles of bloom all over and around the plant, so that it looks as if adorned with a canopy of white and golden balls. The blooms partake of both colours, which greatly heightens the effect. The spike sent is from a plant put out all the summer on the border, where it luxuriates more than in the greenhouse.”

It is certainly an acquisition, on account of the novelty as well as beauty of its appearance. The stem is erect, stiff, polished, and dark purple. The opposite leaves are linear-lanceolate, flat, minutely serrated, with a decided tendency

to droop. They are not at all hoary on the under side, by which circumstance they are known from *C. lavandulifolia*. The annexed cut represents a lateral branch only, but gives the characteristic peculiarities of the plant.—(*Horticultural Society's Journal*.)

THE STEWARTON SYSTEM OF BEE-KEEPING.

I NOW send you weight, &c., of three hives, the management of which I shall report monthly, as formerly explained.

No. 1,	in two boxes,	a last year's swarm,	24 lbs.
2,	„	two years old	24 „
3,	„	three „	22 „

I have selected stocks of different ages to give an increased opportunity for comparison. These are the gross weights. The average weight of two boxes is 8½ lbs. The boxes are similar to those so well described by Mr. Tegetmeier in THE COTTAGE GARDENER of April 7th.

A word about uniting two weak stocks. When sure that swarms are weak autumn is no doubt the proper time for such work; but a good swarm in autumn may turn out anything but satisfactory in spring, and then the only chance of any good being done is by uniting. With storifying boxes this is easily accomplished, even at this season, without the risk of loss or the sacrifice of any brood. Suppose I deem it prudent to join stocks Nos. 1 and 2, and wish the whole to occupy the site of No. 1. The top box in each hive contains the brood and queen. In the evening I puff a little tobacco smoke into No. 2, just as much as drives the bees to the very top of the upper box, which I immediately place on No. 1, and remove the slides. I then blow a little smoke into the mouth of the hive, which sends the inhabitants of No. 1 up amongst their neighbours in the brood box of No. 2. The tobacco has assimilated the odours, and in nine cases out of ten the union is complete, and one of the queens will next morning be found expelled the hive. I make it a point, however, to watch the new corporation for a couple of hours, and should they show any signs of fight I cut off all supply of air, and presently their instinctive dread of too high a temperature overcomes their fighting propensities, and the battle-notes cease. Bees will neither work nor fight in an atmosphere which approaches the melting point of wax. In some instances I have had to repeat the air-stopping process several times, but these were exceptional cases, and I never by uniting lost a single stock, although I have known stocks lost by being joined in the morning.

In fine weather, when food is plentiful, or after two or three dull, wet days, I unite swarms in this way, and dispense with smoke altogether.

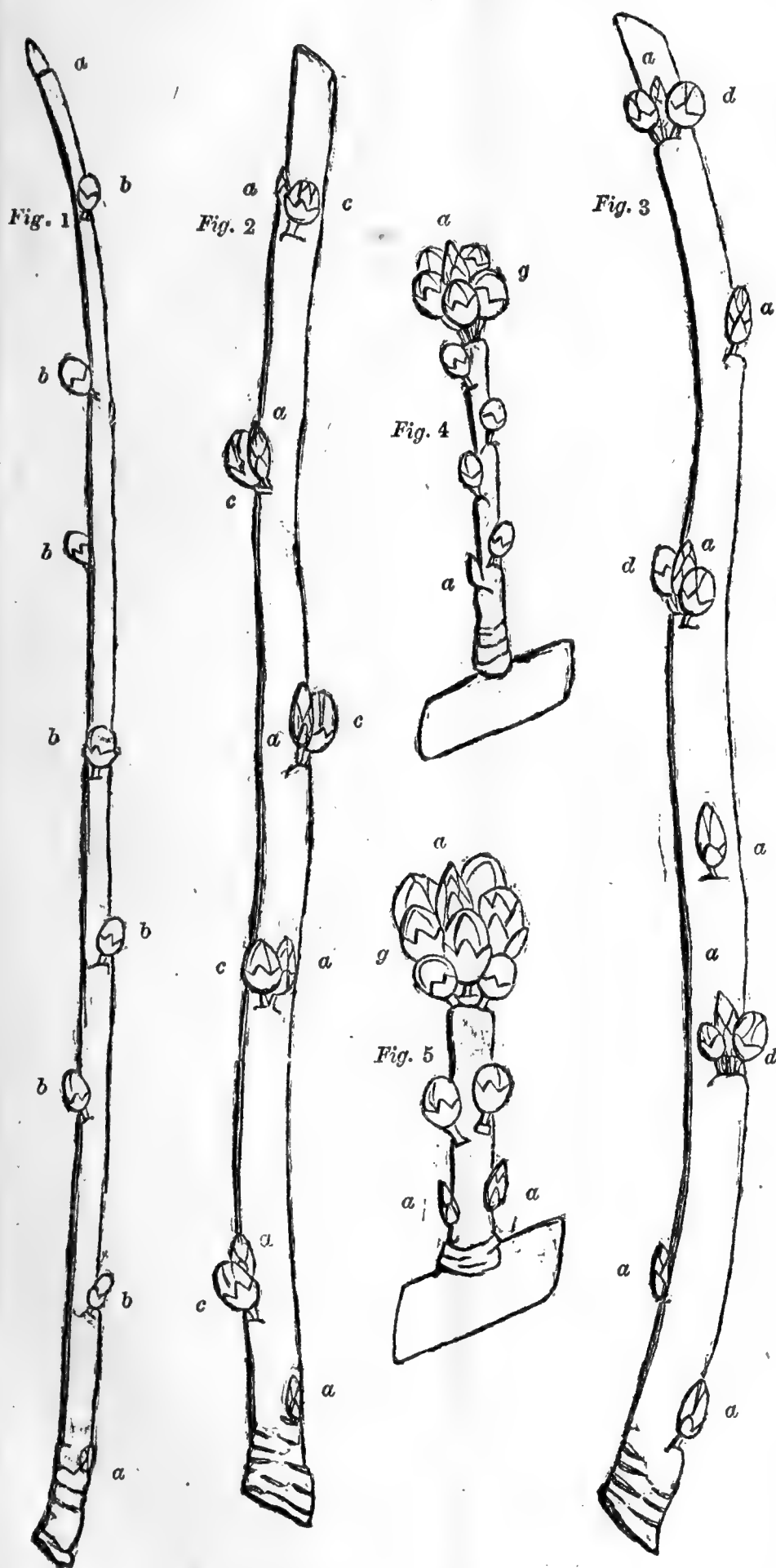
Again, suppose I wish to make sure of the death of her majesty No. 2, say on account of her more advanced years, or because less prolific than her neighbour No. 1, I proceed thus:—Having veiled myself I put in the slides, turn up the top box, and move off with it about forty yards. A few bees will fly out, but they soon return to the original spot. The inverted box, containing brood and queen, I place on a board on the ground, and set an empty box over it. Kneeling over both I raise the empty box on the edge next my body high enough to afford a full view of the inside of both. I now drum on the sides of the full box, and the alarmed bees rush to the bottom, and get filled with honey. An experienced person knows the change of sound which takes place under such circumstances, and this change is the signal for me to cast aside my veil, as now they will neither sting nor fly off. I keep up the drumming, and the bees begin to come to the top, when, with a feather, I direct them towards the empty box. When the run has been commenced in that direction it will continue till every bee has left the full box. In the meantime I keep a sharp look-out for the queen, seize her the moment she appears, shake the bees back among the brood, replace the box on the hive, and things are ready for the operations already noticed, the destruction of the inferior queen having been thus secured. This should be done on a fine afternoon, to save the brood as much as possible from an undue exposure to cold, and the whole process should only occupy a few minutes.

I have reasons for preferring the uniting of weak stocks just at the commencement of the honey season, but will leave them for a future communication.

I hope the proposed Apiarian Society may soon become a reality, and if so, I shall be happy to become a member.—ROBERT WILSON, *Stewarton*.

[A few correspondents have declared their wish to become members of the proposed "BRITISH APIARIAN SOCIETY." So soon as we receive a few more a meeting shall be held and a prospectus issued.—ED. C. G.]

THE PEACH TREE. ITS BUDS.



Eyes or Buds.—These are envelopes containing the rudiments of shoots, leaves, flowers, and fruit. They are conical, and covered with little imbricated scales, more or less coriaceous, and which are merely abortive leaves dried by the air, so as to protect the tender parts which they inclose from the severities of the winter. They continue in this state as long as the flow of sap is arrested by the cold, and they commence growing when the weather becomes sufficiently warm to put the sap in motion.

If the eye does not receive proper nourishment it may remain a long time inactive. It is then called a *latent bud*

(œil expectant). It is generally roused from this dormant state by pruning, performed with the view of calling it into action; or naturally, by an increased flow of sap which acts as a stimulus to it, otherwise it may become completely extinct.

Buds become either *Wood-buds* or *Fruit-buds*, and it is important for the operations of pruning to distinguish well these two conditions. I may, however, remark, that with reference to the Peach tree the nature of the bud is never doubtful to an experienced person. In fact, its form, its place, the age of the wood on which it appears, all help to show the function which it is destined to perform; but for those little acquainted with this tree it is necessary to enter more into detail.

The *Wood-bud* (Figs. 1, 2, 3, 4, 5, *a*) is an embryo shoot covered with imbricated scales of a reddish brown. Its form is usually that of a little cone, more or less pointed; when in the axil of a leaf it is always slightly compressed. The wood-bud, which is also called at Montreuil *œil de pousse* (pushing eye), comes on all parts of the Peach tree, upon the young as well as upon the older wood; and pruning can make it push from very old wood.

Fruit-bud (Figs. 1, *b*; 2, *c*; 3, *d*; 4, 5, *g*).—This contains the rudiments of the flower. It is also covered with scales; but its form is always rounder than that of the wood-bud. Fruit-buds are only found on one-year-old wood.

There are upon the Peach tree buds which are single, double, triple, or more numerous.

The single bud is in general a wood-bud, from which a shoot proceeds. We, however, see flower-buds by themselves; such are those marked *b*, Fig. 1.

Most commonly the fruit-branch that bears them is terminated by a wood-bud or growing point, the use of which is to draw into this branch the sap necessary for the nourishment of the flowers and fruits; but it may happen that by accident or abortion this eye does not exist; yet the loss of the fruit may not result.

Double buds generally consist of a wood-bud and a flower-bud. Fig. 2 shows this kind of buds; *a*, wood-buds; *c*, flower-buds.

In the triple buds, such as are seen at *d*, Fig. 3, two are flower-buds, the other a wood-bud. There are also triple buds which consist of three wood-buds; but this sort does not show itself except on the shoots of young Peach trees, or on those that are very vigorous. It is always the middle eye that is the strongest. Sometimes those at each side die off. I shall state, further on, the procedure adopted in pruning them.

Quadruple buds, although they appear as such, have always in the midst of them a pushing eye that is at first hardly visible, which leads one to believe that it is absent. The four prominent ones are all flower-buds; but the wood-bud that develops a little later has the same functions as the *œil de pousse*, or growing point (11), and from its presence these ought to be called quintuple. They are rare, and always at the end of a little branch or spur (Fig. 4). They are sometimes more numerous, and disposed in the same manner with a growing point in the centre (Fig. 5). The growing point sometimes perishes without bad consequences to the fruit.

When no accident occurs to the fruit-bud there results the opening of the flower, which, after having fulfilled its functions, sets a fruit, of which the growth and maturity successively take place.

The wood-bud produces all the woody parts of the tree. These, at first herbaceous, undergo several modifications of which we must next give some account.—(*Horticultural Society's Journal*.)

(To be continued.)

POISONING MICE.

TAKE $\frac{1}{2}$ oz. powdered nux vomica; half pint common boiling peas; simmer them, with as much water as will prevent their burning, for half an hour, and take them off. When any person sows his Peas let him add one-third of the poisoned ones to what he intends to sow, and throw them together into the same drills.

QUERIES AND ANSWERS.

SPRING FLOWERS.

"I have been much interested in Mr. Beaton's paper on Spring Flowers, and would fain add my mite of discussion, not information, to the subject. Why, then, do we not see more of the *Winter Aconite*, which is quite hardy, and as early, or nearly so, as the *Christmas Rose*? Then I am sorry to find a large class of spring flowers nearly gone out of cultivation, such as the *Dog's-tooth Violet*, the *American Cowslip*, and a double white *Saxifrage*. I have not for many years seen a certain *Star of Bethlehem*, which had purple flowers, a close, compact spike, and grew about nine inches high. I may just mention that I have a *Coronilla* in full flower under the drawing-room window, which stands back from the rest of the house, so as to be much sheltered and very dry. It usually flowers the first week in April. I confess myself one of the novices who fear dividing *Hepaticas*, having a great respect for these lovely flowers, but thinking them very impatient of any interference. As to *Lilies of the Valley*, I would nearly fill the garden with them; but I have tried them in various aspects, and they do not succeed well in any."—MARY HESELTINE.

["Discussion" is the proper word. Let us all discuss the subject of spring flowers, and we shall not want for subjects. The *Winter Aconite* is always in the bulb catalogues in September—the wrong time of the year to make new customers for spring flowers, and the old ones are nearly worn out. Hence "why the *Winter Aconite* is not more seen." If one were to advertise it in January he would sell it by the thousand, and tens of thousands would run after it. The best way to make an *Aconite* impression on this generation is this:—Let it be enacted that every couple who is "engaged," and all those between whom the knot will be tied before the end of next October, that all those who finish their education this season, and all such as go a schooling for the first time this year, with the rest of the family in their turn, should have the initials cut out in very large letters under some deciduous trees near the house, where hardly a blade of grass can grow in summer, and to have the lines of the letters planted with *Winter Aconites*, by their own hands, three inches root from root, and each root one inch deep. The ground is never to be disturbed. No gardener must come near the place till the leaves die down after the bloom. But all the marriage parties ought to have their names in full, so as to show them in glistening gold at the beginning of the new year; and there is "no way in the world" better than to have *Winter Aconites* under trees, where the soil is not disturbed from one generation to another. They and the *Pilewort*, the old *Ranunculus ficaria*, and now *Ficaria verna*, will grow to actual perfection where nothing else would, that is, under an old Beech tree whose boughs sweep the ground all round. So much for that "discussion." The next is *Dog's-tooth Violets*. We have "bushels" of it about Kingston, and the Messrs. Jackson are "full" of it. This valley from Richmond downwards, goodness knows how far, might be named after this pretty flower. It seems as if this was its native place; but the *American Cowslip* is not seen amongst us out of the nursery. The double white *Saxifrage*, *S. granulata plena*, is indeed a great loss. No one sees it now-a-days. What a nice white edging for a May bed! All the common *Stars of Bethlehem* are white, and the uncommon ones are mostly yellow. What, then, can this purple have been? Probably the Portugal Squill, *Scilla Lusitanica*; but if so, it was never half so common as it ought to be. The *Coronilla* is the very best verandah plant we have. Keep it dry and sheltered, and the frost has little influence on it. There is not a plant in the catalogue which pays better for dividing than *Hepatica*; but as it is going out of bloom and beginning to make new leaves is the right time to divide it. The nurserymen divide some of them every year, and never lose one out of ten thousand. Now, the best spring bed which we have seen these twenty-five years is now as full of bloom as ever a *Verbena* bed was, and much in the same way. It is composed of one single plant, the finest specimen of the kind we ever heard of, and this is at Surbiton. The bed is a circle, four feet six inches across, and the plant fills it completely. It is the *Daphne cneorum*—the sweetest of all the *Daphnes*.—D. B.]

REMOVING CROCUSES.

"In a recent number you told us that Crocuses and other bulbs ought to be now taken up; but you do not tell us whether they are to be put away at once in a dry place or into pots of sand or earth. Last year I took mine up about this time, and kept them in sand for some time, and the consequence was that a great many died, and of the rest the new bulbs formed were not worth putting out, so that I was obliged to buy more for this year. Will you please be so kind as to tell me what I should do with those I now have when I take them up?"—LUCY.

[You misunderstood the question. It is not the best thing to move the Crocus or any other bulb when it is growing; but when it is necessary to move it in a growing state it is far better to remove the Crocus as soon as it has done flowering than to leave it till early in May, and then to have to move it in full growth. We have arranged a whole garden of bulbs this very spring, and moved more than two hundred patches of a dozen or fifteen kinds so as to tell better next year, besides half a bushel of Crocuses. We ordered them to be done exactly as they do Cabbage plants, not injuring the roots, giving them better soil, more room, and a good watering or two—that was all.]

SPRING FLOWERS.

"I have for some years had my beds in flower at this season of the year, and the plants I have used for them are white and red Virginian Stocks; *Nemophila insignis, alba*, and *maculata*; Pansies, sown in July, and transplanted into the beds when the greenhouse bedding plants have been removed in the autumn; sometimes *Platystemon Californicum*, but this will not always stand the winter; and *Lasthenia Californica*. The *Nemophilas* will stand almost any amount of frost here. No weather ever hurts the Pansies, and very seldom the Virginian Stocks. I sow the seeds of these annuals in the first week in September, and transplant them into the beds in the early part of February, fixing on a mild day for the purpose, and they afford a very beautiful display. At the latter end of May they are removed for the greenhouse plants. The yellow *Alyssum* is now in flower, and there is a hardy Heath, deep red colour (the name I know not), now in beautiful flower, which would make a good show by being kept in pots, and plunged so as to remove them when other plants are to take their place."—JONATHAN.

[The Heath is called *Erica herbacea*, and need not be potted. One could move it every week in the year with balls to the plants. This is the kind which is so much used at the Crystal Palace for edgings. There are two kinds—one of them a deeper red in the flowers.

Here is a secret which we have been seeking to unravel for years—the true mode of using Pansies in flower gardens. When Mr. Barnet was gardener to the Caledonian Horticultural Society he astonished all Scotland with his Pansies. We saw them, and from that day we saw no more in Pansies than namby-pambyism and "children's play;" but Mr. Barnet had a knack of getting his Pansies true from seeds. Every plant in whole rows of twenty yards each used to be just like the mother plants. How was that? Sowing at the beginning, middle, and end of July would give a succession of Pansies.]

CLIMBERS FOR A BLEAK HOUSE.—SOWING BROCCOLI.

"My house is in a very bleak situation on the seashore, fronting south-east. Are there any pretty climbing plants I can get to grow well in such an aspect, so as to cover the front walls of the house quickly, and where can I procure the plants? or can I sow the seeds now of any quick-growing climbing annuals that would look gay for the summer and cover the walls? Give the colour of the flowers and the time of blooming.

"Is this a good time to sow *Grange's White Broccoli* and the *Walcheren Broccoli*?"—F. J. PERSSE.

[Plant the Japan Honeysuckle against the house. It is almost evergreen, flowers all the autumn, and is as sweet as a Violet. Also plant a crimson Boursault Rose, on which

you can bud as many finer Roses as you can get. All plants can be bought in the nurseries if on sale, and the nearest nurseryman is the best to apply to, as, if he has not got the particular plant, he can procure it cheaper than any one else; he will also be partly or altogether responsible for what he traffics in.

This is a good time to sow *Grange's White Broccoli* to come in late in the autumn; also the *Walcheren*, which you should sow twice a month from the middle of March to the end of July, but only a little pinch each time, so as to have a few plants to plant out at regular intervals throughout the season, because this kind is always in season.]

EDGING OF BULBS.

"Wayfaring on the 1st of last March through Lympstone, Devon, a pretty village on the banks of the Exe, midway between Exeter and Exmouth, I saw there, at the gardens of Capt. Wright, what I thought a very pleasing mixture edging a border, which ran parallel with a long, well-kept gravelled terrace walk. The edging consisted of Crocuses, white, blue, and yellow; the double Snowdrop; and a variety of Squills, *Scilla amœna*. All the bulbs appeared singly, closely planted in four straight rows; they were discriminately intermingled, and the rows were about three inches apart. In answer to your call I send you this prescription of the mixture of Squills; and would not *S. bifolia*, *S. alba*, *S. rubra*, *S. obtusifolia*, *S. præcox*, and *S. Sibirica* add still more to its effect?"—UPWARDS AND ONWARDS.

[Many thanks. Any one thing that has been actually done in this line is of more practical value than one hundred things which might be done. All the Scillas ought to be as common as Crocuses; but, like the Crocuses, they flower at different times, not all at one time.]

BED OF SEDUM ACRE AUREUM.

"In my communication to you respecting the *Sedum acre aureum* as a spring bedding plant I forgot to mention that it is the golden foliage, not flowers, that makes it so desirable a spring plant. The flower is the same as the common variety. I inclose a few sprigs of it."—G. T. F., *Leek*.

[It is the common Stonecrop, with the tops of its shoots bright yellow—another "Golden Chain" in fact. Pray send us a few plants in a pill box by post. Mr. Beaton will be glad of it for the Experimental Garden.]

CONSTRUCTION OF A PEACH HOUSE.

"I am much obliged to you for the paragraph in THE COTTAGE GARDENER on a 'Peach house.' As you say you 'would like to understand more thoroughly' what I really intend doing, I will now explain myself in as few words as possible, and if you will then give me your opinion you will confer on me a great favour. The climate I am situated in is too cold and wet for growing Peaches out of doors. I, therefore, wish to put a house up sufficiently large to hold twelve trees, and to have Peaches, Apricots, and Nectarines in abundance. I consequently want to know the best plan of succeeding in my object. I am not in favour of one plan more than another, and am at liberty to adopt any. One house would not be as convenient, perhaps, as three, say two glass divisions in one house of 100 feet. I mention this so that my naming 'a house' in the former part of my letter might not lead you to think I desired *one* house for all. If you could name any place you would recommend me to visit, if your opinion should be changed by what I have now written, I would go there, as I am desirous of putting up the best."—WALES.

[Our difficulty was with the word *standard* chiefly, and that you do not seem to make an essential, otherwise our opinion remains unchanged. Did we wish to consult economy in fuel, and grow Peaches on a trellis in the usual way, we would have a back wall eleven feet in height, front wall eighteen inches, and width eleven feet, planting against the back wall, and having a low trellis in front. Were firing less an object we would just remove the back wall,

and double the house as a span-roof, standing north and south, its sides facing east and west. Did we wish to make the house handsome as well as useful we would have upright sides from six to seven feet high, and two-thirds of them to be glass; width of house twenty-two to twenty-four feet; height at centre thirteen feet. This would somewhat resemble the span-roofed houses mentioned at page 220, Vol. XVI., as put up by Mr. McIntosh at Lord Panmure's. With such a width there could be a path in the middle, and a path and a shelf round the sides, with two beds for the trees, and the trees could be trained to upright rounded trellises, or grown as *standards* as our correspondent proposed. For elegance and nicety this plan would be the best. For simplicity and economy we would adopt the other and older plan, as is, or used to be, practised at Stowe. It is getting fashionable to grow Peaches as standards, but for the reasons assigned we think it advisable to give them support. Such a house as you propose would be best divided, otherwise you would have a glut at times. When your trees were planted you might grow temporary ones in pots until they filled the house; but for the Peaches hanging down by their own weight we must own that it is grander and more interesting to see them on standards than fastened to trellises. They do remarkably well in large pots and tubs.]

WATER RUNNING OVER FROM THE SUPPLY CISTERN.

"Can you tell me the reason of the water in the supply cistern running over for some time when the water gets hot in the four-inch pipes of a pinery, and then sinking down in the pipes, and wanting to be filled up with sometimes eight pots of water?"—HEAD.

[Fill a saucepan with water, set it on the fire, and bring it to or near the boiling point, and you will find the water will run over, because water expands, and requires more space as it is heated. This is why the water runs over your supply cistern. One of two remedies must be applied. Your cistern must be made sufficiently large to allow of the expansion of water, or it must be as far from being full as will permit of that expansion. As it is, you will not only have to supply, when your water is cold, the quantity run over by expansion, and what was lost by evaporation, but also the quantity seemingly lost by the water taking less room as it cools. When the supply cistern is near the boiler running over there will be prevented by taking the supply pipe below, and then into the bottom of the boiler; but in that case you will require air pipes at the farther and higher extremity of the piping, and when the heat is strong and the pressure great we have seen not only vapour issuing, but even water driven through the small air pipes to the distance of several yards. Presuming other things are right your simplest remedy is enlarging the cistern, and not filling it full.]

WHEN DOES A QUEEN BEE DIE?

"It is always stated in books on bees that the old queen leads off the swarm. If she does so when does she die? for, supposing she leads off a swarm this year, and that they are properly hived, and no maiden swarm comes from them, then next year she must lead off again, and so on for ever."—JOHN M'LELLAN.

[We think a little reflection will enable you to see the absurdity of your position. Does it follow, because a swarm of bees is accompanied by the oldest queen at the time in the family hive, that the same individual must continue to "lead off again, and so on for ever?" Doubts of her immortality are certainly implied in your other question, "When does she die?" Of the exact period of the demise of the mother bee it is impossible to speak with any approach to certainty, so many casualties have to be taken into account. There is no doubt that, except from accident or disease, the life of a queen bee is usually prolonged much beyond that of any other individual in the family, and some have been known to exist during three or four years. Some apiarians have expressed a doubt whether the productive

powers of the queen are not limited to two seasons, or at least that then they begin to fail; but we have no certain guide to direct such a speculation. We only know that nature has endued the bees with sufficient instinct to take every precaution for the perpetuation of the family under all contingencies.]

THE SHREW AND SHORT-TAILED MOUSE.

STRICTLY speaking, the last is rather a wood and field-mouse, but is very mischievous when it gets into Cucumber beds; also amongst early forced Strawberries. It bites these off for the sake of the seeds upon the outside of the fruit, and often does much damage in that way to Strawberries in summer.

The Shrew Mouse is also blamed for this and other mischief, but we think it is carnivorous and a harmless creature; at least, we never observed it otherwise. Those who doubt this may see Buffon, Cuvier, "Journal of a Naturalist," and "Encyclopædia Britannica." All agree that the Shrew, or *Sorex araneus*, is insectivorous. Buffon certainly says that it eats grain and putrid flesh, but none of the others.

Although cats kill this mouse, they do not seem to eat it, and it is common all over the country. The Norfolk name for it is *runny*, which seems to be derived from the specific name, *araneus*. But be that as it may, the Short-tailed Mouse is certainly more herbivorous than the long-tailed ones, and, as your correspondent, "D. T.," mentions in No. 446, is more difficult to trap in the common way. I mentioned this in Loudon's *Gardeners' Magazine* for 1849. The following is the pith of it:—"At one time we could not trap Short-tailed Mice, but seeing and knowing their haunts to be in woods and fields, we suspected their principal food to be vegetables and roots. In this we were not mistaken; for when we put some roots of the *Bunium flexuosum*, or Earth Nut, amongst the Cucumber plants, they were soon eaten up. After that we found no trouble in destroying them with traps baited with Earth Nuts.

"Buffon describes the mouse we have noticed, and says 'it is very plentiful in some parts of France, where it often damages corn by cutting through the stems to get at the ears by bringing them down.' We consider that when they cut off our Cucumber plants it was in search of moisture, for when we placed water in the beds the injury done was less."—J. WIGHTON.

NOTES FROM THE CONTINENT.—No. 3.

BERLIN.

ON Sunday the 5th and Monday the 6th of April there was a Flower Show in Berlin. It was rather a private competition among the gardeners of the neighbourhood than a public Exhibition, as admission could only be obtained by a free ticket from Professor Koch or one of the Secretaries of the Society. The Exhibition was held in the English Hotel, and filled only one moderately-sized room. There were twenty prizes offered of a Friederichs d'or each, equal to about 16s. 9d. English money. Upon the right hand on entering there was a collection of mixed stove, greenhouse, hardy herbaceous, and forced plants, from the Royal Botanic Garden, remarkable only for their bad cultivation, all the hard-wooded plants being fearfully "leggy." Indeed, the only plants in the room that would have passed muster in an English provincial Show were the standard AZALEAS. These were really well-grown plants, and nicely flowered. The best were *Gabriele*, bright crimson; *Queen of Portugal*, purplish; *Natalie*, clear red, the individual flowers two inches and a half in diameter; *Lactea floribunda*, white, with delicate lavender stripes; *Bæchmannii*, purple; and *Versicolor*, delicate pink. *Tropæolum tricolor*, trained over a vase-shaped trellis, and *T. cærulea*, covering a wirework frame shaped like a concave shell, were very pretty ornaments. At one end of the room was a table devoted to new or rare plants, among which the most remarkable was a fine plant of *Begonia splendida*, with leaves like crimson velvet. There was also a small plant of the still more beautiful *B. picta*, with its roundish leaves zoned with silver. Its

flowers are large, pure white, and the stamens of the male flowers and the styles of the females bright yellow. There were two varieties of *B. Thwaitesii*, called *B. Zeylanica* and *B. Stelzneri*; but undoubtedly they are the same species, for I have seen the pale green and white, the almost black, and the mottled-leaved varieties all raised from the same plant. The prettily zoned-leaved species of *Begonia*, which was raised at Kew about two years ago from seeds sent from the East Indies by Dr. Royle, was also there under the name of *B. Roylei*. There were several Palms upon the central table: one of them, *Chamædorea Lindenii*, about five feet high, with several yellow flower-stems, was very pretty and quite new. It is a native of Venezuela, and introduced by the curator of the Botanic Garden at Brussels, whose name it bears, and who travelled in that part of America for some time. Near these was a young plant of the long-leaved *Aralia leptophylla*, which, from its graceful habit, will soon become a general favourite. In another part of the room were some large bushes of *Philadelphus Chinensis*, covered with their sweet white flowers. This is a good old plant for early spring decoration of large conservatories, and is not so much used in England as it might be. There were a few Orchids, but they were for the most part of common kinds and badly grown. The only one worthy of notice was *Cypripedium* (or *Silenipetalum*) *caudatum*. It had three flowers open, and the sepals, which are lengthened out into tail-like appendages, were two feet long. It was stated that these tails had grown at the rate of two inches a day for the last ten days. The show of fruit and vegetables was remarkably poor. There were only a dozen ripe Cherries, two pots of the *Princess Alice* Strawberry with very puny fruit, a plate of Apples, and another of Pears, from Paris, a few sticks of Asparagus, and two plates of the small Artichoke-like tubers of *Chærophyllum bulbosum* and *C. Prescottii*, which are a good deal used here for flavouring soups; they are called "Koerbelruebe." This, with a few bad standard Roses, some inferior Cinerarias, and some Hyacinths, made up the first Show of the season of the Royal Prussian Society for the Promotion of Horticulture.

I was much pleased the other evening with the floral decorations of one of the principal concert rooms here. There were, along the middle of the room, three tall pyramidal stands, upon which the plants were so arranged as to give one the idea that they were three large bouquets. The ever-present Ivy hung over the rim of the vase-like structure which supported the stand; then came a circle of Cyclamens and Chinese Primroses; then Dielytra and Ferns; then Hyacinths, Narcissus, and Tulips, with a few small Dracenas; then Deutzias, Lilacs, Begonias, and Azaleas; then a tuft of the graceful broad-leaved Grass, *Panicum plicatum*; and shooting up in the centre was a tall *Dracena tenuifolia*. Other parts of the room were decorated with vases in which large Oleanders were growing, and with Ivy trailing over their sides.

The weather here has much improved within the last fortnight. We have no frost now, and though the nights are rather cool the days are warm and spring-like. The trees are all just bursting into leaf, and the spring flowers are beginning to look gay. Brightest among them is the beautiful light blue *Scilla Sibirica cærulea*, which is common in every garden, and is, as it deserves to be, a great favourite.

P.S.—In reply to Th. von Spreckelsen I must say I was greatly disappointed at not being able to see the celebrated garden of the Consul Schiller. As I had long before heard a very high character of it I called on my way to Flotbeck, but, the gardener being out, I was not allowed to go round the garden, the reason for which I could not comprehend, as the person to whom I applied spoke German faster than I could understand it, and the short time I stopped in Hamburg would not permit me to make another visit. As regards the crowding of the plants in the Botanic Garden, I must say I have since become acquainted with places where it is carried to a much greater pitch; for instance, in the Botanic Garden of Berlin, and still worse in that of Vienna.—KARL.

VEGETABLE CULTURE AND COOKERY.

THE CAULIFLOWER.

THE Cauliflower delights in a rich and highly-manured soil, with a cool bottom, not hot and burning. If the soil should be light, or the subsoil gravelly, manure must be applied in large quantities.

The earliest crop of Cauliflower comes into use in May, and for this the seed must be sown in the third week of August. Between the 18th and 25th of that month, and neither sooner nor later, prepare, in an open and warm situation, a bed of a size sufficient to supply the number of plants required, by making the surface light and fine. On this sow the seed thinly, and rake it in, afterwards sifting a little fine soil over it, but not more than a quarter of an inch thick. If the weather prove hot and dry, water the bed and shade the young plants when they begin to vegetate. In the middle of September, when the plants have made two broad leaves, prick them out on a bed of light, rich earth, in rows four inches apart, and three inches distant from each other in the rows. This must be done after rain; or, if the weather should be dry at the time when they must be planted out, let them be watered a few hours previously, that they may rise more freely from the seed-bed, selecting those only which are the strongest, and which have the straightest stems, the others being allowed to remain protected by a frame during winter. Give them frequent waterings, if necessary, till they are quite established. If the nights are cold and the season ungenial they may be covered with the lights of a garden frame to bring them forward; but during the whole of October they must be exposed night and day to harden them.

In the last week of October prepare a plot of ground by giving it a good coating of well-rotted manure, and digging it in a spade's depth, breaking the clods and rendering it fine and mellow. At four feet apart plant out clumps of three, four, or five of the strongest plants which were pricked out in September, and let the plants be at such distances from each other as they may conveniently be covered with a handglass, and let as many of these clumps be planted out as there are glasses to cover them. The glasses are to remain close down till the plants have taken root, after which, as long as the weather continues mild, tilt them up about three inches high to admit air; but in cold, frosty weather keep them close down. During fine weather in winter the glasses may be entirely removed in the middle of the day, but closed down again at night; and in this position they are to remain till the latter end of February or beginning of March, when all the plants are to be removed except two from under each glass, and planted out in the open ground in rows two feet and a half apart, and the same distance from each other in the rows. The use of the glasses may be entirely discontinued in the end of March or beginning of April, and the two strongest plants which were left are to remain where they are till they produce heads in May, the others which were planted out forming a succession crop in June or July.

The plants which were allowed to remain in the seed-bed in September, protected by a frame or hooped covering, should, during winter and spring, have abundance of air in fine weather; and during March and early in April they are to be planted out as directed above, and in July and August they will come in for use. During summer the ground should be frequently hoed and stirred, and the plants earthed up round the stems. Copious supplies of water will be necessary if the season be dry, and occasional waterings with liquid manure will prove highly beneficial.

Should the winter prove severe, and the plants be killed, as is sometimes the case, a sowing must be made on a hotbed in January or February; and when the plants have made two broad leaves they are to be pricked out on another bed, protected by a frame, and in April planted out to supply the place of those which suffered during winter.

For an autumn and early winter crop of Cauliflower the seed is to be sown in rich, light soil, in an open situation, in the end of May; and when the plants are large enough they are to be pricked out on another piece of ground as directed above. In the end of July plant them out where they are to remain, and in September, October, and November they will be ready for use.

TO BOIL CAULIFLOWER.—Trim off the outside leaves, and cut off the stalk close to the bottom of the head. Let them lie in salt and water for an hour, and then put them into boiling water with a handful of salt in it. Boil slowly till done, skimming the surface occasionally, and take them up immediately they are tender. Where milk is plentiful it is a great improvement to boil them in half water and half milk. Serve with or without white sauce according to taste.

TO STEW CAULIFLOWER.—Heads which may have been left over, or such as have been boiled till nearly tender, may be divided into small pieces, and put into a saucepan with white sauce and a few mushrooms in it, or some very small onions which have been previously boiled, and when done enough served with toasted sippets.

TO FRY CAULIFLOWER.—Boil a large Cauliflower as above, divide it into small pieces, and leave it on a dish to cool. Make a sufficient quantity of batter, in the proportion of a table-spoonful of flour and two table-spoonful of milk to each egg. Beat the eggs very light, and stir into them the flour and milk alternately, a spoonful of flour and two spoonful of milk at a time. Have ready some fresh butter in a frying-pan over a clear fire, and when it has come to the boil and done bubbling dip each piece of Cauliflower twice into the batter, and fry them a light brown colour. Serve them hot.

CAULIFLOWER WITH GRAVY.—Boil them as already directed, and put them for a few minutes into a stew-pan with a little fat and a pinch of flour; add some gravy, salt, pepper, and nutmeg, a little broth, and stir them carefully.

CAULIFLOWER WITH CREAM.—Boil them as above, and pour cream over them; sprinkle them with salt and pepper and the raspings of bread. Place the dish in a Dutch oven before a gentle fire, and let it remain there for a quarter of an hour.

CAULIFLOWER WITH TOMATO SAUCE.—When they are boiled set the heads, or pieces of the heads, together side by side in a dish, the flower uppermost, so as to appear to form only one large flower, and cover them with Tomato sauce.

CAULIFLOWER WITH CHEESE.—Boil a large Cauliflower, as before directed, till it is quite tender, and when drained break it into sprigs. Have ready three ounces of Parmesan or any rich cheese grated fine. Put into a stew-pan a quarter of a pound of fresh butter, nearly half of the grated cheese, two large table-spoonful of cream or rich milk, and a very little salt and cayenne. Shake it over the fire till it is well mixed and has come to the boil; then add the sprigs of Cauliflower, and let the whole stew about five minutes. When done put it in a deep dish, strew over the top the rest of the grated cheese, and brown it. This will be found superior to macaroni.

CAULIFLOWER OMELET.—Take the white part of a boiled Cauliflower after it is cold, chop it very small, and mix with it a sufficient quantity of well-beaten egg to make a very thick batter. Fry it in fresh butter in a small pan, and send it hot to table.

QUEEN BEE AND ROYAL JELLY.

I WAS somewhat startled to find in your last all my ideas on the subject of the queen bee being fed, while in the larva state, with food different from that eaten by the other bees in that state, in danger of being overthrown by the "fudge" of Mr. Golding or the *ipse dixit* of Mr. Wighton. Mr. W. says that he has often "examined hives during the time that queen bees are reared without discovering any food differing from pollen, or bee bread." I am not so wedded to this theory but that I would give it up if convinced of its improbability, and this I conceive I shall be prepared to do when Mr. Wighton has explained what is the nature of that dark-looking, acid substance sometimes found in the bottom of cells that have been used for queen bees, and *why* this substance is never found in any other cell. Did Mr. W., when searching for this substance, carefully examine the cells that had been used for queen bees? I have found and tasted it, and have no doubt it is quite different from ordinary pollen. Would not this matter be set at rest by the use of a powerful microscope, and by examining queens'

cells at different stages of the growth of the larva? I venture to throw out this hint that apiarians may bear it in mind in the approaching season. Even now any whose stocks have died on account of the late inclement weather may throw light on the subject by carefully examining the bottoms of old queens' cells.—A COUNTRY CURATE.

TO CORRESPONDENTS.

NAME OF ROSE AND OLEANDER (L. J.).—The Rose is some purple China, but no one could tell the name from two petals and a leaflet. There are about two-and-thirty Roses of this caste as like each other as sheep in a flock. Who could tell which was which from seeing the ears, or legs, or tails, or even fleeces? Such Roses must be seen *out of doors* in bloom to determine the kind, and then many of them would puzzle their owners. The double Oleander is the more common kind, and any nurseryman in the kingdom can supply them if he likes to send for them to those who grow them largely. We saw a thousand of them the other day at Messrs. Henderson's, Pine Apple Place.

FLOWER-BEDS (Delve).—You ask no question, and why watch for an answer? We received the plans of two flower-beds, but no opinion is even asked on the shapes.

CATCHING MICE (A Young Beginner).—Every gardener knows the figure-of-four trap, and you are right in saying that a broad bean is the best bait for it.

CIRCULATION OF HOT WATER (Reader).—If the flow-pipe proceeds from near the top of the boiler, and the return-pipe enters near the boiler's bottom, hot water will circulate in the pipes although they are below the level of the boiler; but the circulation will be slower than if the pipes were on a level with the boiler, or above this level.

BOOK ON OUT-DOOR GARDENING (S. Cooke).—Buy "The Garden Manual" just published at our office. There is no work of any authority on rabbit-keeping.

SHETLAND COWS.—C. P. C. will be obliged by being informed where he can procure these, and at what price.

DISBUDDING PEACHES (Hampton Wick).—See what Mr. Errington says to-day.

PLAN FOR FLOWER GARDEN (X. Y. Z.).—We have repeatedly published our invariable refusal to furnish such plans. If you will expend fourpence on one of our Manuals, "Flower Gardening for the Many," you will there find six plans, and how to plant them.

VARIOUS (A Subscriber from the Beginning).—Kitley's *Goliath* and Trollope's *Victoria* are large, insipid Strawberries. At the conclusion of our twentieth volume we shall probably publish an index of the whole. We have not lost sight of what you last name, but we have so much pressing upon us that selection is difficult.

DANDELIONS (J. P.).—Root them out; they are not relished by cattle, nor are they so nourishing as grass, which they displace; besides, their seeds are pests to all around you.

TRAINING VINES ON LOW WALLS (A Beginner).—We do not remember the queries. Write again.

IRON CEMENT.—An *Experimentalist* will oblige Another *Experimentalist* by stating how it is made and used.

USES OF A THREE-LIGHT FRAME (Ibid).—You do not tell us whether you wish your frame to gratify your eyes or to minister to your palate, nor yet the size of the brick frame itself, as three feet in height in front gives us no conception of its height behind, nor of its length and breadth. We will suppose it contains about fifty-four feet, and, in the first place, presume you want eatables. Suppose, then, that you make a slight hotbed of one light, and sow it with Radishes in November, a second in December, and a third with Radishes and Carrots in the beginning of January, with a few Lettuce and Cauliflower seed. By February your first light will be pretty well done. Turn up that afresh with a little fresh dung, and plant early frame Potatoes, with Radishes, Lettuces, Cauliflowers, &c., sprinkled over the surface. The second light to follow ditto, and then you will have two lights of Potatoes and one of Carrots. By May your first light will be cleared; let it be turned up again, and honoured with Cucumbers or Melons; the second ditto, and by July your Carrots will be gone, and many a nice dish of Horns one light will supply, and those may follow suit, and keep you in good supply with Cucumbers or Melons until the end of autumn. Perhaps you do not like them; then you may have French Beans earlier by a month than out of doors, and then follow with Capsicums, &c. Suppose flowers are your object, then in such a pit you may keep all kinds of bedding plants in winter, especially Scarlet Geraniums, Calceolarias, Verbenas, &c., without artificial heat. You may turn most of them under protection by the side of a wall, &c., in April; may grow in such a pit nice plants of Calceolarias, Cinerarias, and Pelargoniums on to Midsummer; or you may, by means of a little bottom heat, rear tender and half-hardy annuals after April, or strike all sorts of bedding plants for your flower borders, and after your pit is emptied of them in June you may use it for growing Fuchsias, Balsams, Cockscombs, &c., and when tired of them by September you may strike in it Pelargoniums, Verbenas, Calceolarias, Pentstemons, and hosts of other things you want for flower-garden decoration next year. We have a good many lights for pits and frames of one sort or another, and it is rarely we can get two or three to give them a paint or repair, so constantly are they filled with something under them, summer and winter. The palmy, easy days of gardening, when all the lights in a frame ground were set to rest in winter, are gone never to return, as we all know to the cost of our legs and brains. If *Ibid* would combine floristry and eatables, then his pit would protect his Auriculas, Polyanthus, Heartsease, Carnations, Pinks, &c., in winter, and would grow his Cucumbers, &c., in summer.—R. F.

NAMES OF FERNS (B. P. M. K.).—Your Ferns are as follow:—1, 3, and 4. *Asplenium trichomanes*. 2. *Asplenium adiantum-nigrum*. 5. *Polypodium vulgare*. 6. *Blechnum boreale*. All are worth cultivating.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JUNE 3rd, 4th, and 5th. BATH AND WEST OF ENGLAND. Sec., Mr. John Kingsbury, 10, Hammet Street, Taunton. Entries close the 1st of May.

JULY 8th, 9th, and 10th, 1857. LEAMINGTON. Sec., Thomas Grove.

JULY 9th. PRESCOT. Sec., J. F. Ollard.

JULY 28th, 29th, and 30th. SHEFFIELD, SOUTH YORKSHIRE, AND NORTH DERBYSHIRE. Sec. William Henry Dawson, Fig Tree Lane, Sheffield.

AUGUST 8th, 10th, 11th, and 12th. CRYSTAL PALACE. Sec., W. Houghton.

AUGUST 19. BRIDLINGTON. Sec. Mr. Thomas Cape.

SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.

SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Sec., Mr. H. Churchill, King's Head Hotel.

OCTOBER 1st and 2nd. WORCESTER.

NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM.

Sec. John Morgan. Entries close the 2nd of November.

DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.

JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.

JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.

N.B.—Secretaries will oblige us by sending early copies of their lists.

APPROACHING POULTRY SHOWS.

IN worldly matters it must be said that man is a learning and improving animal. It would be strange if he were not so, with the open book of every-day experience before him. It is, nevertheless, the province of certain of us to bring those things which belong to our pursuits prominently before others, who, though interested in them, are so much immersed in the cares of their callings that they lack the leisure to seek from a mass of information the particular parts or points that more immediately interest them. Every man in this busy world, while working for his own interests, is in reality and truth ministering to the pleasures or wants of others. We have to do with poultry, and will put ourselves in the position of those useful personages in "Gulliver's Travels" whose duty it was to call the attention of their masters from dreamy generalities to things of immediate moment.

As it is a common thing to hear the spectators of a Poultry Show express their sorrow that they did not hear of it in time to make their entries, we now call their attention to the liberal prize-lists of the *Crystal Palace* and the *Worcester Exhibitions*. We noticed the former in a recent number, and, as its entries will close before those of the latter, we again mention it. Both these Societies have made use of the experience we spoke of. It has been a general complaint at summer and autumn shows that the old birds are so out of feather and condition, from moulting and other natural causes, that many were unable to send their birds, and others saw little beauty even in the successful among those that competed. These exhibitions are then confined to chickens of the year.

We had occasion, when we published the report of the Winter Show at the Crystal Palace, to remark on the many advantages that place possessed over all others, and the luxurious accommodation it afforded to visitors. As the next Exhibition will be in the summer these will be increased in every way, and those who go may indeed expect a treat of no ordinary character.

Our first duty in speaking of the Worcester Show will be to call the attention of exhibitors to the liberal prizes offered. Ten cups, all of the full value of £10; twelve of smaller amount, from £5 to £3; and numerous money prizes, form one of the most liberal bills of fare we have seen. It is for exhibitors to support such an Exhibition, as the Committee state the Show will not take place unless 500 pens are entered. If such were the case, which we consider impossible, and which we should much regret, the entrance money will be returned in full. We admire this plan, and it is calculated to place these Shows on a very firm, honourable, and upright footing, and we think the Committee deserve not only the support, but the thanks of all amateurs.

We confess we are friendly to chicken shows in the summer and autumn. When they are announced early, as these are, breeders have ample time to make their selection. Few

are able to show many pens of first-rate adults; but all can pick out many of chickens, and not a few cups may be gained in the winter by the judgments and comparisons of these chicken tournaments. Nothing helps us so much to a correct opinion as comparison, and it is difficult for a man to carry his birds in his idea to a show with a view of testing them by others. We all have a weakness for our own, and we *will not* see their defects if we can help it.

It is too late in the season in November to make any discovery that may be turned to advantage, but these Shows will give ample time to alter, to amend, and to profit. We think, then, that even some unsuccessful breeders may hereafter thank us for calling their attention to these Exhibitions.

We will conclude with one remark. If we mean to gain knowledge and experience by comparison we must take care to put ourselves in competition with the best of the class. Such prizes as we have named will be sure to attract the best birds of every breed. To be content with less would be to put ourselves in the position of Don Quixote. He mended his helmet twice, and tried it with a sword cut, which demolished it both times. Somewhat discouraged he mended it a third time, and, without any trial, declared it perfect; nevertheless the sword of the Biscayan cut it in half, and took part of the knight's ear with it.

BRAHMAS—ARE THEY COCHINS?

I WISH to offer some observations on the respective qualities of Brahmas and Cochins. Now, sir, Mr. Tegetmeier, in his "Profitable Poultry," says that Brahmas are nothing else than cross-bred between Cochins and Dorkings or Malays. To support this startling theory he brings forward his anatomical researches. He says that he has found the characteristic *frontal groove* of the Cochin very strongly marked in the Brahma. He also says that he has seen Brahma Pootras manufactured by allowing a Buff Cochin cock to run with light Dorking hens. He also says that many contradictory statements are rife about their habits, &c. Now, let us look at the arguments favouring the supposition of Brahmas being a pure breed.

I will say nothing about the anatomy, as *that* I do not understand. However, if Brahmas are not pure, how is it they go on breeding so strongly and well without degeneracy, for in all cross breeds you find this effect?

2ndly. The Brahmas differ in habits altogether from the Cochin. Brahmas roam over acres, and fly over fences and gates with ease; Cochins, on the other hand, never seem to grow tired of the same small bit of ground, and are confined by a three-feet fence. Brahmas roam about till dark; Cochins roost very early. Brahmas forage for themselves; Cochins do not seem to have any idea of it.

I should feel very much obliged if any of your subscribers would compare from experience the egg and chicken production of the two breeds.—ONE WHO HESITATES BETWEEN BOTH.

THE MERITS AND DEMERITS OF SPANISH FOWLS.

PEOPLE are now accustomed, especially Londoners, to laud Spanish fowls to the skies. Spanish are generally placed at the head of the prize-list, and higher prices are paid for them than for any other breed of fowls. Now, I am an enemy of Spanish, but still I want to look impartially and calmly into their merits and faults. The advocates of Spanish say that they are peculiarly well-fitted for town fowls, as they suffer less when full grown from confinement than any other breed. Again, they present such a striking contrast in the colour of their *bodies, combs, and faces*, that it is very pleasing to the fancier. Lastly, they lay such exceedingly heavy, large, and richly-flavoured eggs. On the other hand, let me set forth a few of the faults of these fowls. Although they can bear a confined situation well, yet in a limited run they will not lay well. Then they moult so late in the year, and are so long in moulting that their laying in winter is very much impeded; and, lastly,

they do not sit, and through their "gawkiness" and long dark legs they are bad table fowls; and if their feathers get ragged, or their combs lose colour, or their white faces get injured, what miserable appearances the Spanish have!—A WILTSHIRE POULTRY-KEEPER.

ALL THE RULES AT POULTRY SHOWS SHOULD BE STRICTLY ENFORCED.

It will be generally acknowledged that all of our Poultry Exhibitions are dependent in no small degree for continued success on the general satisfaction and obvious rectitude of the awards by those gentlemen who may be appointed to officiate as Judges. The suspicion of favouritism, or leaning towards the acting Committee of management, or even towards any one among their "friends," if once engendered in the public mind, destroys every vestige of confidence. In such an unhappy state of things recrimination is certain to insue, and the harmony of good feeling and reliance once broken, misunderstandings of all kinds rather increase by litigation than otherwise, sometimes even extending so far as to induce personal feuds and severances. How manifestly obvious and desirable it is, then, to use all due care for the prevention of these discords on occasions that certainly *ought* to be replete with feelings of pleasure and satisfaction *only* to every individual connected with them. To insure these much-to-be-desired results a carefully-advised prize-list and well-considered standard of "regulations" are compulsory and imperative; but even after these have been duly laid down not a few of our Poultry Committees have unfortunately wrecked their hopes by not **STRICTLY** adhering to the rules as publicly put forth by themselves, when on the day of arbitration they find such rules militating against either some member of their own body, some intimate friend and acquaintance, or, perchance, some influential supporter of their own particular exhibition. These practices are decidedly worthy of the repudiation they generally call forth among the great body of competitors, who justly maintain that regulations once promulgated for the avowed guidance of all parties ought undoubtedly to bear equally and as stringently on every exhibitor as on any of his rivals. Any laxity on this score, call it by what name they will, is in truth neither more nor less than "favouritism," and ought not even to be tolerated in a single instance. The awards of the Judges surely ought not to be tampered with to suit the views of particular individuals; the golden rule should be to mete out to all the favours and position they *deserve* without reference to individuality in any way whatever. This, however, most unfortunately not having proved always the case, it would be well if on all future occasions the rules, as *printed* for the particular show they apply to, should be unceremoniously *enforced* without respect to any party, for then, on this score at least, all grumblings would be finally dispelled.

There is, too, another frequent cause of complaint that has again and again been brought forward, viz., selection of the best situated pens to suit the interests of a certain party or parties. The injustice of this procedure, where really practised, as undoubtedly it has by careful pre-arrangement frequently been, is so transparently obvious that we need say no more than express our hearty wish it may never again take place. It is such practices that do most certainly militate against the permanency of Poultry Exhibitions in general; but very little doubt exists in our mind that in most instances these discreditable plans are adopted by exhibitors in the present day, who rather pursue the poultry "fancy" as a lucrative "calling" than solely as an amusement. To such parties *winning is everything*, and really the extraordinary efforts made by individuals thus influenced, few, very few, among us would accredit who had not had the opportunity of witnessing transactions that take place carefully *veiled* from the public eye. Hence the vital importance of Committees acting with fearless independence of all exhibitors, determined that neither threats nor persuasions shall cause them to swerve from duty, is equally and as universally allowed as that the Judges themselves should enter the exhibition room without previous knowledge, acquired by any indirect means, as to

the proprietorship of the poultry competing. These are truisms that few will have the temerity to dispute, and the tendency to cause evil reports and misgivings will be equally evident in cases where arbitrators have themselves supplied particular pens at extraordinary prices, under the direct stipulation from the purchaser and exhibitor, that they are "wanted" to win at such and such a Poultry Meeting. That Poultry Judges of anything like extended practice should in various instances at once recognise many of the leading pens that frequently come under their arbitration is easily supposed, and will by most poultry breeders be at once accredited; but that such officials should actually themselves supply or even select, prior to exhibition, poultry from the yards of exhibitors, in particular cases where they themselves are afterwards to fulfil the duty of finally disposing of valuable trophies of superiority, is so completely inconsistent with all rules of rectitude and straightforwardness, that it now certainly becomes the especial duty of exhibitors generally to denounce the system altogether, and insure to the best of their belief that the most perfect fowls, and they only, shall win.—CHANTICLEER.

BELGIAN CANARIES.

I FEEL a deep interest in breeding the *real* Belgian Canary, and as your correspondent, Mr. Moore, justly observed, "parties wishing to keep up the standard of that breed cannot be too particular of whom they purchase; for there is a breed of birds, very long and coarse feathered, which is not the real Belgian, but they are a degenerate and a mongrel breed."

Allow me to say I have seen the real Belgian bird, with all its beauty, in the possession of your correspondent, Mr. Moore, of Fareham, who justly claims the honour of first introducing them into England, and the ten points he states to be the standard he has nearly arrived at; in fact, for position, shoulders, back, thigh, and colour, his birds surpass anything I have ever seen. This is the kind of bird breeders should propagate, if in want of symmetry, &c.

He has happily arrived in *colour* to pure orange, and somehow, peculiar to himself, can always produce it. Your readers would do well to communicate with him; they will find him free to give his opinion and advice, and his extensive knowledge of breeding that kind of bird enables him to state from experience, as his only object is to further the breeding of the "real Belgian," and that parties seeking such may not be led away with a spurious kind, however flattering the advertisement may be. Your correspondent is at a loss to understand "*strip themselves well up*." Now I will explain this point (7). It is a phraseology of bird fanciers here, and it means stateliness, majestic appearance; and this is characteristic of the real Belgian bird. It exerts itself, as though by instinct, to exhibit elegance, and nothing surpasses it for beauty in appearance.—S. C., *Portsea*.

ON HENS LAYING AND SITTING.

It is well known that pullets, or young hens, are better layers than old ones. A friend of mine, however, has a very productive hen ten years old; but this, like some other matters connected with natural history, is an exception from the common rule. Some fowl-keepers assert that when hens come to maturity their ovaries contain the embryos of the whole number of eggs they will lay during their life, and that it depends on the quantity of these whether hens will be good or bad layers, however long or short they may live. This seems very doubtful; but, however it may be, much must depend on the health of the fowls being secured by proper food and treatment. Perhaps it may be more safely held that the embryos of eggs are formed in the ovaries only between each time of laying after incubation, or ceasing to lay for a time; and even that must be somewhat modified, for hens are apt to lay more eggs when only one is left in the nest. This fact shows that imperfect eggs remain in the ovaries, being prevented from coming to maturity when incubation is excited by hens sitting and laying in a nest full of eggs, and it is a question what becomes of them. Do they remain good until the next time of laying, or pass off with the excrements? or are they absorbed into the general system?

When the eggs are taken from the nests of many of our wild sorts of birds they seldom lay again the same season more than half their usual quantity. As most of those birds only rear a brood once a year, and soon lay a second time, it cannot be supposed that these eggs were from embryos which would have remained torpid until the next season, but rather a remnant unlaidd which belonged to the first set of eggs; and this is a wise provision of Nature against loss or accident to the first nestful.

Most boys are aware that birds will lay more eggs when only one is left in their nests; they know this trick as well as the hen-wife does that with her "nest egg." And game-keepers take advantage of this, both by following the nest-egg plan, and by taking a whole nestful at once, and placing the eggs of pheasants and partridges under common hens, trusting the birds will lay again in a second nest, in which they are allowed to sit. More eggs are got by this means, and of course more birds hatched, but I question if more of them come to maturity than when the birds are allowed to rear their brood their own natural way; but that is beside my purpose. I have hinted that incubation comes on before hens have laid all their eggs, without stating the cause. This, of course, is rather a knotty point, but I do not think that the *fit* comes on hens by their knowledge of the number of eggs they lay, for they seem as pleased to sit upon one as upon a dozen, and, as I have stated before, their ovaries are empty; but in the latter case it is only when they lay in a nestful of eggs; therefore, until better evidence be produced, I am of opinion that incubation is induced by the friction of the breast on the eggs.—J. WIGHTON.

OUR LETTER BOX.

YOUNG RABBITS DYING.—**COMB OF SPANISH FOWLS** (*A Beginner*).—As regards the young rabbits dying off at the age of three months it is difficult to say what may have been the cause. It may arise from the young being removed from their mother at too early a period; it may be the dampness or coldness of the hutches which are on the ground; too many rabbits may be in one hutch; they may not be cleaned out often enough; it may be want of food, "greens," &c., both while with the doe and after being removed. It may be the rot they have got, which can only be stopped by a dry, warm hutch, with plenty of hay, and feeding with corn and herbs only. But we do not think it is this, as *A Beginner* seems to have fed his rabbits chiefly on oats, &c. It may be the wax in the ear they have got, which may be removed by taking a piece of stick, and removing the wax out of the ear, and then washing the ears well with soap and water. 2. If the Spanish bird be removed to a yard free from other cocks, and be well fed, watered, and housed, and some hens allowed him, the colour of his comb will soon re-appear. A grass walk is indispensable. 3. The pale comb in the hens may arise from many causes. It may arise either from the same cause as the Spanish cock, or from consumption, roup, or diarrhoea. If it arises from the former nothing will be of any service. If roup, Baily's roup pill, together with a warm abode, good feeding, &c., will soon cure her. If diarrhoea, a pill of prepared chalk is the best thing.

PREVENTING A HEN EATING HER EGGS.—"I perceive in a former number an inquiry for a preventive to hens picking and eating their eggs. If the bill of the hen is scorched by rubbing it with hot iron it completely prevents the hen from pecking the eggs, and does no injury to the bird."—F. J. PERSSE.

FOOD FOR GOSLINGS (*An Old Subscriber*).—On the second day after hatching put a turf of green grass before them. Boiled oatmeal, boiled rice, bread crumbs, and *pond* water, are their best food for the first week.

PROLIFIC PULLET.—"A pullet in my possession, a twelvemonth old, has just laid her hundredth egg. Is this an unusual number?"—H. A. [It is a very unusual number to lay without intermission or becoming broody. Of what breed is she?]

LONDON MARKETS.—MAY 4TH.

COVENT GARDEN.

Supply has been much influenced during the past week by the cold, ungenial weather, the *Asparagus*, *Sea Kale*, and tender succulents having suffered much from the frost. The continental produce now forms a considerable item here, and comprises *Peas*, *French Beans*, *Carrots*, *Artichokes*, *Lettuces* of both sorts, and *Endive*. Hothouse fruit quite sufficient for the demand. *Strawberries* in excess—price lower.

POULTRY.

There has been rather a better supply this week, and the trade is improving. Breeders are, however, crying out for warmer weather, as chickens do not grow.

Large fowls... 7s. 0d. to 7s. 6d. each.	Guinea Fowls 4s. 0d. to 4s. 6d. each.
Smaller do. 5s. to 5s. 6d. "	Pigeons 10d. to 11d. "
Chickens .. 3s. 6d. to 4s. 6d. "	Rabbits 1s. 5d. to 1s. 6d. "
Goslings 6s. 6d. to 7s. "	Wild ditto 10d. to 11d. "
Ducklings.. 4s. 0d. to 4s. 6d. "	Deverets.... 3s. 0d. to 4s. 0d. "
Plovers' Eggs in bulk	2s. to 2s. 6d. per dozen.

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—May 5, 1857.

WEEKLY CALENDAR.

D M	D W	MAY 12—18, 1857.	WEATHER NEAR LONDON IN 1856.						Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.				
12	TU	Helleborine (Serapias).	29.719—29.637	64—52	N.E.	70	15 a. 4	38 a. 7	11 58	18	3 53	132
13	W	Willows, many (Salix).	29.628—29.606	65—40	S.W.	14	13	39	morn.	19	3 54	133
14	TH	Valerian (Valeriana).	29.543—29.521	58—40	..	19	11	41	0 39	20	3 54	134
15	F	Bryony (Bryonia dioica).	29.493—29.394	62—40	..	20	10	42	1 8	21	3 54	135
16	S	Cotton Grass (Eriophorum).	29.610—29.447	64—41	..	—	8	44	1 31	☾	3 53	136
17	SUN	ROGATION SUNDAY.	29.651—29.472	62—40	..	34	7	45	1 47	23	3 52	137
18	M	Purslane (Montia fontana).	29.518—29.420	60—40	..	14	6	47	2 1	24	3 50	138

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 63.8°, and 41.1°, respectively. The greatest heat, 86°, occurred on the 17th, in 1843; and the lowest cold, 25°, on the 15th, in 1850. During the period 118 days were fine, and on 78 rain fell.

ORNAMENTAL GRASSES.

PHA'LARIS CANARIE'NSIS.

(CANARY GRASS.)



THIS ornamental Grass is an annual. Its *root* is in the form of numerous white fibres. *Stems*, when cultivated, two or more feet high, upright, round, rather rough, streaked, swelling a little at the joints, which are brown, and at the lower joints often branched. *Leaves* nearly half an inch in breadth, bright, but rather milky green, soft, sharply pointed, with long, swollen sheaths, and that of the upper leaf so much swollen as to form a spathe, or hood-like covering and protection for the young flower-head which it incloses. *Flower-head* really a panicle, but so compact as to resemble a spike. It is single, erect, an inch or more long, beautifully variegated with green and white, and with a small, narrow, sheathless leaf at its base. Valves of the *calyx* with two green ribs on each side, and much larger than the valves of the corolla. Within these

large valves of the calyx are two other small, white, skin-like valves, not more than half as long as the inner valves of the corolla. *Corolla* of two unequal-sized valves, the larger valve hairy, but the smaller only hairy along its back. *Nectaries* two fleshy, concave, pear-shaped substances on the outside of the base of the corolla. *Seed* with a blackish line at one edge, and having a little shield at the base of the other. It continues covered by the corolla, one valve of which almost entirely embraces the other. This cover varies from white to straw colour, brown, and even black, but is always very smooth and glossy. It blooms in July, and the seed is ripe late in August. It is included in *Triandria Digynia* class and order of the Linnæan arrangement.

Turner, writing in 1562, says of this Grass, "It is named in Greke, *Elymos* and *Melinos*; in French, *Panik*; in Duch, *Fench* or *Fenick*; but it hath no name in English yet, but it may well be called *Panick*, after the Latin." He adds that "Constantinus in hys booke of husbandry sayeth that panik and millet make feldefayres and thrushes fat; and the small byrdes ar muche desyrous of the same." It was cultivated here when Gerarde published his Herbal in 1597, for he says, "It doth grow in England if it be sowed therein," and "we use it in England to feed the Canarie birds." All authorities agree that though it is occasionally found wild in this country, yet that it was originally introduced from Spain, or some other warmer climate, where it is native.

It prefers a rich, rather clayey loam, and should be sown in small circular patches, rather at the back of a border, or near the centre of a bed, early in March.

THE April Meeting of the ENTOMOLOGICAL SOCIETY was held on the 6th ult., the chair being occupied by Dr. J. E. Gray, F.R.S., Vice-President. Amongst the donations announced as made to the library since the last Meeting were the 23rd volume of Sturm's beautiful work on the Coleoptera of Germany, the continuation of Mr. Hewitson's charming publication on Exotic Butterflies, and other periodical works.

Mr. Foxcroft sent from Rannock, Perthshire, some beautiful specimens of the rare Moth, *Petasia nubeculosa*, with the remark that the brood for the present year had already disappeared. Mr. Samuel Stevens, however,

observed that he had still specimens in the pupa state, which he had reared from the caterpillar during the previous year.

Mr. Newman read a paper on the cause of the deep impression observed on the elytra of certain individuals in different species of Ground Beetles belonging to the genus *Agonum*. The impression is near the region of the scutellum, and is not confined to the individuals of either sex. Mr. Westwood observed that he had at first thought it was owing to the absence of wings in such individuals, it being known that such a modification took place on certain of the *Harpalides*, but he had found wings on specimens both with and without the impression. He thought that a minute examination of the structure of the metanotum would best determine the cause of the peculiarity in question.

Mr. Douglas exhibited a specimen of the beautiful American Beetle, *Buprestis* (*Ancylocheira*) *aurulenta*, taken alive in London by Mr. McLachlan.

Mr. Syme exhibited specimens of the rare Sphinx, *Deilephila Galii*, which had arrived at the perfect state on the 20th and 23rd of March last, their development having been accelerated by being placed in a glass vessel near a fire daily from the 26th of January, and kept at a temperature of 75°, being several months earlier than the usual period for the appearance of the perfect insect. During this period the chrysalids were covered with moss, which was regularly kept damp.

Mr. Lubbock exhibited and explained the stereoscopic peculiarities of a binocular microscope, which he had recently obtained from Paris.

Mr. Wollaston read a notice on a peculiarity which he had observed in the eyes of the small Beetles belonging to the genus *Trixagus* (*Throscus*. Leitr.), consisting of a deep groove running transversely across the eye. No such structure had, he believed, been hitherto noticed in insects.

Mr. Tapping read a paper by M. Fedarb on species of *Acari* and *Psoci*, observed in drawers and boxes lined with paper, the insects apparently having fed on the vegetable material of the paper, making minute circular cells, in which particles of excrement were observed. He likewise described a black species of *Psocus*, which had been found to be very destructive in the Barbadoes Nut, a number of which had been eaten by these insects.

Mr. Frederick Smith read some observations on the nomenclature of a new British species of *Bledius*, in opposition to Mr. Ianson's remarks on the same subject read at a former Meeting. Mr. Westwood said that he had also been alluded to in the controversy on this subject, but he had not thought it fit to waste the time of the Society by a discussion on it.

Mr. Fortune, the Chinese traveller, exhibited two very large pastils, about half a yard long, used by the Chinese for the purpose of driving away Musquitoes from apartments. They were formed of the sawdust of Juniper or Pine wood, and when lighted had the effect

of immediately driving the Musquitoes away. Rolls of the same material wrapped in paper were also sold in shops for the same purpose.* He also exhibited a kind of torch made of the leaves and twigs of a species of *Artemisia* bound together, which, when lighted at one end, was used by the Chinese whilst engaged in cutting honey from the comb of the Hive Bee. The attendants on such occasions handle the hive and comb with perfect impunity, never being stung by the bees, although they are naked to the waist. During the operation one of them gently waves the smoking torch about, which has the effect of slightly stupefying and bewildering the bees, so that they become harmless.

DISBUDDING TRAINED FRUIT TREES.

(Continued from page 65.)

THE PEAR.—This requires a somewhat different kind of handling, inasmuch as the habit of the Pear is to bear on the spurs principally, that of the Peach on the young wood, albeit they will occasionally both deviate. Some persons make a practice of tying down annually a few young shoots of promising character on the branches, in order not to rely on the natural spurs entirely. This is my practice, and I see no reason to depart from it. Others prune all young growths away. This they call "spurring back." Now, in disbudding the Pear, the operator must do so with reference to one of these practices. Under either case, however, there will always be a considerable quantity of young growths in healthy subjects which it is not expedient to retain. Before commencing the operation a close examination should take place, in order to distinguish well between spray of fruitful tendencies and the reverse. These things are at once obvious to the professional gardener. Those who tie down or train in young spray must know that it is of little avail selecting long-jointed and late growths. That which is alone worth selecting is very short jointed, dark coloured to the very point, and which has left off growing betimes in the previous summer. Such may be reserved according to the growth of the trees, but by no means in profusion. No two shoots should, if possible, be trained side by side. All, therefore, which looks gross should be rubbed off. If, however, any fears are entertained of the genuine embryo blossom-buds sprouting through over-active growth, the gross shoots may merely have their extremities pinched, and remain on the trees for several weeks, still taking care to remove those which will produce an inconvenient amount of shade. All these proceedings, let it be observed, are the consequence of an over-excited tree. If they were planted on proper soils there would be no need of a tithe of this ceremony. Thus may trained Pears be handled during May and June. Like the Peaches they are better done at two or three times, supposing two or three weeks to elapse between the operations. One thing must be remembered. All those gross shoots which were pinched to stand over should be entirely pruned away by Midsummer, seizing a period of drought, if possible, for the operation, in order that root excitement may not tempt any of the embryo blossom-buds to sprout.

THE PLUM.—The disbudding of Plums, as to gross shoots, may be a little more severe than Pears; they are not so liable to excitement in the blossom-buds in

* Burning brown paper has the same influence over gnats in England. So soon as the smoke is well diffused in the room the gnats settle, and will not again take wing until the fume is gone.—ED. C. G.

course of formation. The coarsest sprouts may, therefore, be totally removed where not requisite as soon as they are half a dozen inches in length. They will require a second dressing in a few weeks afterwards, when a selection of short-jointed shoots may be reserved for tying down in July. Plums, however, do not require so much intense sunlight as tender Pears or Peaches.

APRICOTS.—This tender fruit tree requires all the sunlight of our climate, and means should be taken betimes to secure it. The leading shoots should not be pinched unless very gross, and it is required that they branch much in order to cover the wall. When that is the case the points of such may be taken off when the shoots have grown about eight or nine inches; they will then sprout right and left, and will have time to become ripened by the autumn. In healthy-growing trees many foreright shoots will be produced, which it will not be desirable to retain for want of room; these must be pinched to a couple or three eyes when about four inches in length. It is not well, I think, to disbud them, as they are apt to cause a considerable blemish in the bark; and, moreover, by pinching them back as here suggested they frequently generate a kind of spawn eyes at their base, which are very likely to become blossom-buds. These proceedings must take place at two or three different times, extending over May and June, towards the end of which the tree should be well looked over, in order to obtain plenty of sunlight both to the ripening fruit and the blossom-spurs for the future year. It not unfrequently happens that Apricots will make a fresh growth immediately the fruit is gathered: this shows how much the fruit must draw from the system of the tree. In such case I think it prudent to suffer them to produce a little spray for two or three weeks, not more; but by the middle of August every stray shoot of this later growth should be pinched back to a couple of leaves, in order to let the sun shine fairly on the clusters of spurs which contain the future blossoms. There can be little doubt that much of the bad setting in Apricots is occasioned by the want of sunlight at the end of summer. If shoots are too crowded and gross, or waste spray is suffered to shade the spurs, we may fairly expect to find something amiss in the ensuing spring.

I may now offer a few remarks applicable to all in some degree, and which may be called maxims in disbudding. The first thing I would advert to is climate. This differs much, as we all know, even in our little island. Surely no gardener would dream of training the shoots of tender fruit trees as thickly in Northumberland as in Devon. The mode of training, also, and distance of the principal shoots must be taken into consideration. Then there is something in locality. Some gardens are particularly favoured, and well known to be so; others, from some cause or other, are unfortunate as regards the accumulation of heat. Training, therefore, and, of course, the amount of spray reserved, must be ruled in some degree by these considerations. The habit of producing too much spray in trees is an affair deserving the most grave consideration. The labour, or, in other words, time consumed in removing waste spray, the result of over-culture, is in the aggregate enormous. It is this consideration which leads many to carry the dwarfing system to an extreme. Judicious planting is the best preventive; and as for curative measures I know of none equal to judicious and well-timed root pruning.

Until the readers of *THE COTTAGE GARDENER* can get their trees established to their mind I must beg to recommend most earnestly that they pay assiduous attention to disbudding and summer pinching or pruning.

R. ERRINGTON.

MEETING OF THE HORTICULTURAL SOCIETY.—MAY 5TH.

THIS was an extra good May Exhibition of fruit and flowers. There were also some very good collections of home and foreign-grown vegetables, but the most gratifying part of the business was the election of forty-three new Fellows, all in "one lump" at last. They passed an act at the Anniversary Meeting that so many of the new Fellows present must object to a proceeding before that proceeding can be a bother to the rest, and goodness knows how many more than one person then present would wish to inflict the penalty of a two hours' balloting on those who reformed the Horticultural Society, and brought it triumphantly through that blackness and darkness of despair which both Houses of Parliament foreshadowed to us in our struggles this time last year. But gardeners have now got their foot into the Society, and if they allow it to go wrong a third time they will have to be blamed more than their betters. Well, the fruit was such that the worst of it, a few years back, would have been a credit to the best gardener in the country. The *Melons* were extraordinary, the *Pine Apples* ordinary, the *Grapes* exceedingly good, and the *Cherries* exceedingly like them; the *Strawberries* were more like the *Melons*, not in size of course, but in excellence; the *Peaches* were as fine, and soft, and blushing as love in a summer-house, and fully as sweet and as well-flavoured; *Cucumbers* were never such "fruit" before, and the mayor of Ipswich himself could hardly have done them more justice; and between Frost and Snow we had the scullery, still-room, and pantry as luxuriously supplied as if it were summer and sunshine since last Christmas. The royal gardeners kept back their *Grapes* for the christening, and right too; but her Grace of Sutherland did not "walk" over the course. Her next-door neighbour of Keele Hall and his Grace of Bedford were nose and nose, and only a head and half a neck behind her in *Grapes*, while Her Majesty was just up behind the ear of her Grace at the winning-post with *Cherries*, both having the same kind, the *Circassian Cherry*, which is a most capital Cherry for early forcing, and looks much like the old Blackheart Cherry. Mr. Fleming sent about six dozen of these in his dish, and Mr. Ingram not quite so many. Another Mr. Fleming, F.H.S., gardener in the same family, but at Clevedon, near Maidenhead, sent a small dish of *May Duke Cherries*, which had no chance against the size and colour of the *Circassians*. The three bunches of *Black Hamburgh Grapes* from Trentham were put at the head of the table—the place of honour—and were said to be the very finest samples that ever were exhibited before the Society; and, "were it not for these," those from Mr. Hill, gardener to Mr. Sneyd, at Keele Hall, and also from Mr. Forbes, of Woburn Abbey, would prove that British gardeners are above all others in the early cultivation of the Grape. The Messrs. Sperry and Campbell, Queen's Graperies, Brighton, were only a shade behind, and most of the rest were excellent except one dish of half-ripe *Sweetwaters*. How any gardener could cut green *Grapes* on purpose, as it were, it is difficult to say.

The best *Pine Apple* was from Mr. Davis, gardener to Lady Bridport, a *Black Prince*, weighing 5 lbs. 6 ozs.; the rest were *Queens* from 2 lbs. to 3 lbs.

There was only one dish of *Peaches*, the *Royal George*, from Mr. Hill, of Keele Hall, "one of our best fruit growers."

Strawberries were numerous in dishes and in kinds. *Keens' Seedlings* took the first prize to the best Strawberry grower in the country, Mr. Smith, a market gardener at Twickenham. Never was the kind seen in better style. Mr. Tillyard, F.H.S., exhibited three kinds in double rows side by side in one basket—

Keens' and *Alice Maude*, with *Sir Harry* between, all fine. *Alice* and the *British Queen* were splendid in other dishes also, and of *Keens'* there was no end. A dish of a new Strawberry called *Adair* was too ripe and injured in the carriage, and the Judges would not decide on its merits under these disadvantages.

Fruit of the *Loquat* was sent from Sion House, and it was said to be "equal to a bad Apricot."

Mr. Nicol, gardener to General Studd, Exeter, sent a collection of beautiful Melons, netted and plain, ribbed and no ribs. A small one called *Nicol's Green-flesh* was particularly nice-looking; and there was a scarlet-flesh Melon, called *Prince Albert*, from Mr. Lamb, gardener to J. Barrington, Esq., F.H.S.

There was a dish of *Dioscorea*, the China Yam, and ten minutes we were told was the right time to boil them. Boiling them like Potatoes only turns their starch to so much paste.

Mr. Clark, gardener to Lord Darnley, sent a very fine collection of vegetables; also Mr. Snow, at Earl de Grey's. His *Nonpareil Cabbage* is most beautiful and very early; and *Snow's Matchless Green Cos Lettuce*, "the best-flavoured Lettuce grown," could only be surpassed by Mr. Solomons, of Covent Garden. His *yellow Sea-kale* was new to me. When I was man cook we had a horror of yellow Savoy and all yellow vegetables.

Mr. Frost, gardener at Preston Hall, sent a brace of the finest *Cucumbers* I ever saw out of Ipswich, or rather, out of that corner of Suffolk, about two feet long, and the flowers almost fresh on their noses. The kind was raised in 1852 at Dropmore, and the plant was in bearing since last July, according to a memorandum sent along with it.

Mrs. Johnson, of Covent Garden, to whom I tell the people to go for wedding nosegays, exhibited here for the first time.

Mr. Rucker, the great Orchid grower, sent three new kinds of very great merit—a *Tricopilia* in the way of *coccinea*, but half as large again and four times more highly coloured; a *Chysis* with pale rosy flowers, called *Limningi*, not quite so large as those of *bractescens*; but the lecturer, who seems to go to all the balls, declared that the flowers of this genus will last fresh a whole week, although worn in the hair every night. This accounts for his notions of *Isabella Grey*, the young American beauty at the Messrs. Low, of Clapton, and a fine *Burlingtonia fragrans*. Messrs. Veitch, Glendinning, Henderson, of Pine Apple Place, and Cutbush, of Barnet, sent large collections of most beautifully-grown plants; Mr. Forsyth, gardener to Baron Rothschild, sent another large collection of stove and greenhouse plants; and Mr. Ellis, gardener to Dr. Bunce, Woodford, Essex, sent a collection of early Pelargoniums, and another of Lycopods and Ferns, all in first-rate style. The doctor is a new exhibitor, and he has a good stove, a good greenhouse, and a good gardener to begin with at least.

There were eighteen kinds of Orchids in Mr. Veitch's collection. The largest was *Dendrobium speciosum* in fine bloom; the most curious was *Uropedium Lindenia*, "a lady's slipper turned inside out," with three long strap-like fastenings instead of sepals and the pouch, the queerest thing in all the Orchids; and as to the finest, they were all in most beautiful order and bloom. He also had the best-habited new *Rhododendron* we have had since *Javanicum*, a stiff, sturdy, stocky, close-jointed plant, with smooth, thick leaves, and as thick as they are long, and silvery beneath. The flowers come in threes; they are as large as, and of a clearer white than, those of *formosum*, and they are frilled on the edges like *Azalea crispiflora*, or rather more so. It is from Moulmein, a range in the Malay peninsula, next to Birmah, and therefore, like *jasminiflorum* and *Javanicum*, it must have a greenhouse. The three were there in great beauty, and there was an improved *Javanicum*;

but I heard say that the very best kinds of *Rhododendron Javanicum* are in the hands of the Messrs. Fraser, of Lee Bridge Nursery. A large standard of *R. Dalhousianum*, with thirty or forty blossoms, in the same collection, was anything but worth showing—a gawky, ill-fared-looking plant, and the flowers decidedly ugly in their greenish, sickly-looking tints. *Nicotiana fragrans*, from the same firm, is very like a bedding one which we had last year in the Experimental Garden, and flowered till the frost came. It was given us under the name of *Sweet Petunia*, and it was very sweet in the evening, a pure white limb, and a long tube, and the size of the Virginian Tobacco flower will represent it. Messrs Veitch had also a new slender leaf-and-scape bulb from California, with small, drooping, dark crimson flowers, having green tips, and several others. Also two boxes of cut flowers of hybrid Rhododendrons of their own raising; and there were others from Sion House which were much praised for their beauty, hardiness, and the skill with which they were obtained between *Ponticums* and *arboreums* by Mr. Carton, who emigrated to Australia.

In the collection from Pine Apple Place were a fine *Elaeocarpus denticulatus*, six or seven feet high; five kinds of yellow Rhododendrons, Boronias, Pultenæas, Apelexis, and a fine *Hibbertia Reidii*, with a Heath-like growth, covered with yellow blossoms—all in fine style.

That from Mr. Cutbush, of Barnet, contained well-grown and bloomed *Hypocalymma robustum*, Apelexis, *Statice Holdfordi*, Boronias, Heaths, a large Azalea; *Dillwynia speciosa*, the "Burning Bush;" and the old *Polygala Heisteria*, now called *Muraltia Heisteria*.

Mr. Forsyth's collection embraced *Pimelea spectabilis*, Azaleas, Heaths, Apelexis, variegated Pandanus, *Caladium bicolor*, Crotons, Dracænas, and others, all in the exhibition style.

Mr. Glendinning sent a fine specimen of the Rice Paper plant of China, a *Dracæna* called *lutea*, and some others.

The gardener of the Society furnished a large collection of similar plants and three well-bloomed Achimenes.

Mr. Alnut sent a Camellia twelve or fifteen feet high, the old *Sasanque rosea*, in full bloom.

Mr. Clark, of Brixton, sent two fine, light, seedling Azaleas, and a fine Hippeaster of the *Johnsonii* section, called *Amaryllis magnifica*. It has a four-flowered scape.

There was a fine new white bedding and forcing Geranium, from A. and J. Beard, of Hendon, very much like *Pearl* in the flowers, with a stiffer habit. This will be a most welcome bedder to bloom as long as *Tom Thumb*, and to force as well as *Alba multiflora*, and pray memorandum the name, which is *Blanchefleur*, and will "come out" next October.

Another most welcome bedder is a variegated-leaved *Dahlia*, from the Messrs. Henderson, of the Wellington Road Nursery.

Amphicoma Emodi was shown by Col. Fairhead. It was described from the Pine Apple Place Nursery last week. The rarest in the collection from our own garden was *Rhododendron formosum*, with large white flowers, and a standard *Ceanothus papillosus*; a fine large white Azalea, and *Acacia grandis*. A splendid bunch of cut flowers of *Cantua dependens*, the richest of all our tubular flowers, from Mr. Luscombe, F.H.S., from Devonshire, where it blooms out of doors with little protection. Another bunch of cut flowers of *Smith's Yellow Noisette* Rose, from Mr. Snow, was held up to us as a triumph of skill. If Mr. Snow was as young as when I first knew him he ought to have *Isabella Grey* in a bed with his *ochroleucus* and other yellow Roses, for which he takes the shine out of most of them.

But let us talk about shining after seeing three dozen

pot *Auriculas* from Mr. Turner, of Slough. He gives a shine to every plant he grows, but how he does it is the mystery. The *Auriculas* were most beautiful; one-third of them were green-edged, and more than that were selfs, or kinds with one colour and the eye colour. All these selfs had white eyes except *Attraction*, a rich mulberry, with a large yellow eye; *Vulcan* was the best dark one, with a white eye; *Lovely Ann* has the broadest green edge, and *Ringleader* the best green florist's edge. Mrs. Smith and Bessie Bell are two of my own favourite dark selfs after *Vulcan*, and I prefer selfs to all others. I have a bed of seedlings with above sixty plants of these selfs and a score of mongrels, all from a shilling's worth of seeds; but my plants are kings and queens in dress as compared with the plain-edged kinds of the florists, for my edges are frilled and fringed and crimped as true as mathematics, and there is no dust or powder at all on them, and when the rest of the world will be wise enough every one who has a garden will buy a shilling's worth of *Auricula* seeds, and another of *Polyanthus* seeds, of which we have "oceans" in the Experimental from a hint we got from one of our subscribers, about the "flowers of my childhood," two years since.

D. BEATON.

P.S.—Mr. Fleming sent rooted cuttings of Grape Vines made from the green tops and laterals, a plan which he has long adopted at Trentham, and which is quite different from the discovery by Mr. Gruneberg.

WINDOW GARDENING FOR SPRING.

(Continued from page 67.)

PROPAGATION BY CUTTINGS.—Everything said in the way of preparation for seed sowing will apply to striking cuttings in pots, only the drainage, if possible, should be more carefully prepared, and the second layer from the top should be one-half sand and one-half compost, and the top layer, from a half to one inch in thickness, should consist entirely of pure sand. The use of the sand is to prevent too much moisture accumulating about the base of the cutting on the one hand, so as to rot it, or the entrance of too much air on the other, to dry it up.

In all particular cases what was said of double pots for seedlings is still more applicable to cuttings. Two or three cuttings placed firmly close to the sides of a small pot, and that placed in a larger one, and the space between stuffed with moss, &c., and a bellglass or tumbler placed over, with its lips resting on the moss, will strike sooner than if placed in a larger pot, because the sides of the pot, as well as the nearness to the hard drainage, from the resistance given to the swelling of the cutting, will cause roots sooner to be protruded.

When bellglasses and much trouble in shading cannot be commanded a larger pot may be used, but only half filled, and in addition to the covering of sand it will be advisable to place a stone, a piece of brick, or charcoal in the centre, and insert the cuttings close to the side of the pot, and place a square of glass across its mouth.

All that was said about a Waltonian case and a stand on the principle of a hot-water table will equally apply to cuttings, and in such a case for window plants anything in the shape of bellglasses will rarely be required. If such a case or frame is used, whether the top be in one or several pieces of glass, it will be desirable that it should be flat and easily moveable, so that its sides may be reversed. Anything in the shape of an ordinary handlight top would not answer well, because, if much moisture were condensed against the inside, you would have to get rid of it by wiping frequently, whilst, if flat, you have merely to turn the bottom side upwards.

As corroborative of the usefulness of a Waltonian case, or of a hot-water table-stand, I may mention that a gentleman who is very fond of plants, but who has nothing in the shape of a hotbed, told me the other day that he raises many cuttings and tender seeds very successfully in a

stout old deal box, the bottom part of which is lined with tin, and with a second tin bottom four inches above the bottom of the box. This space he fills and empties of water at pleasure by a funnel at one end and a small tap at the other. In general he supplies water every twenty-four hours; in cold weather twice in that time. As he cultivates merely to gratify himself he has not yet brought himself to look upon it as a "work of necessity" to give this hot water on Sabbaths, and yet he says the soil is generally nice and warm on Monday mornings, though the hot water was supplied the last thing on Saturday night. Having used large bottles of hot water in frames and pits I can well suppose that such heat will continue a long time when surrounded with a non-conducting substance.

Much of the mystery attending striking cuttings would be dispelled did we remember that success in general will be in proportion to our means and skill for preventing the cutting feeling the check of its removal from its parent stem. Hence, other things being equal, well-ripened shoots of evergreens and leafless ripe shoots of deciduous plants are more easily struck than those in a greener growing state, though, if all necessary appliances are present, the latter will strike the *soonest*. For instance, make a Currant cutting in November, and plant it in the ground, and next summer it will make shoots and roots, because what stimulates these will stimulate the others. Plant a similar cutting with its leaves on in July and August, and it will die to a certainty, because the leaves will evaporate moisture, and there is no means of supply. Surround that cutting with a bellglass, shade it from the sun, give a moist atmosphere, so that the leaves are forced to absorb as well as perspire, and thus are kept from anything like flagging, and by this extra care you will get a rooted plant sooner. The same as respects a *Fuchsia*. Plant deciduous leafless shoots anywhere during autumn and winter where they will be free from frost, and in April and May they will make roots and shoots. But there is a nice-growing plant in your window in the beginning of May; it has many little shoots on it from two to three inches in length. Slip them off close to the stem, or, as gardeners say, with a heel; dress away any loose matter and a few of the lower leaves; insert the slips in a pot, and expose them to sun and air in your window, and most likely your labour will be lost; but cover them with a bellglass to keep the atmosphere about them moist, and shade from sunshine until they can stand it without flagging, and you will have rooted plants in about as many days as you would have had in weeks from deciduous leafless cuttings. The same, again, as respects a *Myrtle*. A hard, well-ripened shoot will strike with but little attention and shade, but it must have time. A half-ripened shoot, though softish, will strike sooner *only* if you can keep its leaves from flagging.

Hence will be seen, at once, the folly of contending about what and how many leaves should be left upon a cutting. Could we prevent these leaves flagging, in other words, force them to absorb more than they perspire, then the more leaves left the better. The difficulty of doing this makes it prudent to effect a compromise, and we lessen the number of leaves and shorten large ones, that they may exhale less of the juices of the cutting. In general cases it is preferable to have the base of the cutting cut through at a bud, because the vital forces are more accumulated there, and there is less danger of damping from extra absorption of moisture. When watered after planting the cuttings should be dry before being covered up with glass, &c. They should never be dry afterwards, but the foliage should frequently be dewed when the soil is moist enough. Air in a fresh state is as essential to them as growing plants; but in the case of those shut up with glasses, &c., the air should be given at first chiefly at night, and as they grow then continued morning and evening. This air should be given by tilting up the glass on one side, say half an inch at first, and increasing the quantity by degrees, shutting down close before the sun strikes upon the cuttings. Other things being equal, stiff side-shoots, slipped off as I have mentioned in the case of the *Fuchsia*, about three inches in length, will strike better than longer shoots cut into pieces.

The window plants from which cuttings may be taken in April and May are chiefly *Acacia armata* and *grandis*; *Carnations* of the Tree kind; *Cytisus racemosus*, *Attleana*, and *filipes*; *Coronilla glauca*, and especially the variegated

variety; *Daphne Indica*, *Jasminum nudiflorum*, *Deutzia gracilis*, *Pelargoniums*, *Fuchsias*, *Roses* of the China group, and double *Wallflowers* of various colours. All kinds of scarlet *Geraniums* and other bedding plants may also be propagated for the balcony and flower garden.

The other modes of propagation are chiefly two, the separating the tubers and bulbs of tuberous and bulbous plants, and the dividing of the roots in the case of a herbaceous plant. For the first we may have an example in the case of a *Snowdrop*, or a *Tulip*, or a *Ranunculus*; in the second in the case of a *Violet*, or a *Daisy*, or a *Hepatica*, when the flowering is over.

When there is room the following may be in bloom in the spring months: *Acacia armata*, *grandis*, *juniperina*; *Auriculas*, *Primroses*, and *Polyanthuses*; bulbs in the shape of *Hyacinths*, *Tulips*, *Snowdrops*, *Crocuses*, *Narcissuses*, *Jonquils*, *Scilla tenuifolia*, *Leucojum vernum*, *Lachenalia tricolor*, *Oxalis grata*, *flava*, *tricolor*, *sericea*, all potted in autumn and kept in a dark place, free from frost and much heat, until the pots are full of roots, and the bulbs shooting freely upwards; *Calceolarias*; *Camellias*, such as double white, &c.; *Carnations*, *Tree kinds*; *Coronilla glauca*, *Cyclamen Persicum*, &c.; *Daphne odora*, *Dielytra spectabilis*, *Deutzia scabra*, *Genista Canariensis*, *Jasminum nudiflorum*, *Lily of the Valley*, *Mignonette*; *Mimulus*, florist varieties, from seed in July or divisions in August; *Mimulus moschatus* (Musk), though not in flower, from division; *Primula Sinensis*, *Salvia Gesneræflora*, *Weigela rosea*; *Violets*, *Neapolitan*, *Russian*, &c.

The earlier *Cinerarias* and *Violets* will be those chiefly to which the operations of planting out and dividing will be necessary. I shall give a short outline of the culture of most of those mentioned. I will merely mention at present that though double and other *Primroses*, *Auriculas*, and *Polyanthuses* are not usually grown or shown in windows, yet few things are more beautiful and interesting in April. I lately saw some beauties in such a position in a cool room, and also a fine collection in the front of a broad shelf of a greenhouse, with plenty of air and a gauze shade to break the force of the sun's rays. The one had been kept on a balcony all the winter, covered with glazed calico in cold weather, with a rug over that in very cold weather, and both removed in fine; the other was kept in a frame in the usual way. The chief thing in both was securing medium dryness all the winter. As the spring days came they were top dressed, and received more water. Whoever saw either would like to have some in his window, and with less bother and more pleasure than going to see them in frames, &c.

R. FISH.

(To be continued.)

QUERIES AND ANSWERS.

GARDENIA FLORIDA NOT BLOOMING.

"I have some plants of the double *Gardenia florida* which refuse to open their flowers. They are two-year-old plants, in six-inch pots, in apparent good health, and the buds progress favourably until they begin to open, when they drop off. The plants potted last summer are potted in sandy loam and peat in equal quantities, and standing on a shelf over the hot-water pipes in the stove. The temperature is from 65° to 75°, and moderately moist. I have given the plants several waterings of weak guano water, but the only improvement visible is the more rapid growth of young shoots and darker green leaves. Would plunging the pots in a sweet hotbed be a help?"—A YOUNG GARDENER.

[The plants would be better with a moist bottom heat before the blossoms begin to open, but under the circumstances they ought to answer. They will do better when a year older. We suspect that, unknown to yourself, the roots have been several times over-dried. If the pots are full of roots, and you suspect anything of the sort, set them for half an hour in a pail of water at 70° or 75°. When the bloom expands the temperature must be lower and drier.]

TREATMENT OF HEATHS DONE FLOWERING, AND OF FUCHSIAS WINTERED IN THE DARK.

"Be so good as to tell me what I ought to do with *Heaths* and *Andromedas* as soon as they are out of bloom. I bought many handsome ones in flower last year, which are now with scarcely a flower on them, and long, straggling, untidy branches.

"Several young *Fuchsias* about one foot high which flowered late last year, and which I kept alive, as you desired, in the winter in an airy closet, with occasional waterings, were put into the greenhouse in February, but are stunted-looking, not shooting vigorously or growing fast, though all alive. What ought I to have done with them?"—F. C.

[*Heaths* require somewhat different treatment according to their species, and so do *Andromedas*. One thing is common to them all. Prune away all dead flowers and the flowering shoots freely or moderately, according to the habit of the plant, shortly after it has done flowering. After a week or two of comparative rest, from a low temperature and comparative dryness, encourage growth by more moisture at the roots and a closer atmosphere, to give the young shoots a fair start. When this is secured, then shift if the plants require it, and encourage growth by similar means to those specified, taking care to give abundance of air and light early enough in the autumn to harden and mature the wood made. We should almost require to see your plants to tell you exactly what to do with them, as many oldish plants, bought in full bloom, may be made to bloom on if treated as mentioned above *without the shifting*; but many such old plants, after being thoroughly pot-bound, never recover a shifting process, and so well is this known by the practicals that they would prefer a healthy young plant in a two-inch pot to such a flourishing old plant in a six-inch one when their object was to grow a specimen.

As you have no flowers to speak of, and you can hardly make the plants worse, we would advise the following:—Prune back all these straggling shoots as soon as this reaches you, and as much more as will give the basis for a compact specimen. Place the plants in a corner of the greenhouse, or in a pit where you can keep them close and warm, say in a temperature averaging from 55° to 65°; be rather sparing of water at the root for some time, but syringe the top frequently, and shade from sunshine, giving but little air until the fresh shoots break freely and are lengthening nicely, when more air and less shade and syringing must be given by degrees. When the young shoots have come away nicely, and are from one to two inches in length, then you must decide whether you will fresh pot or not. If the plant seems old and pot-bound, and flowers are chiefly your object, then we would advise picking off a portion of the surface soil, fresh surfacing, and giving abundance of water to secure growth, making sure the drainage is all right. If you aim not only at flowers for next year, but a growing, healthy specimen, then you must try to repot, but, under the circumstances give only a small shift at first, and, after turning the plant out of the pot, gently disengage the fibres of the hard ball at the outside of it, and use sandy, rough peat in repotting it in a pot only one size larger. Be sure the old ball is well moistened before doing this. If from defective drainage or other causes the old pot is not full of roots, and these are not over healthy, root pruning to a certain extent may be necessary, and in such a case the plant should be transferred to a smaller pot, and be placed in very sandy, rough heath soil. After potting keep the plants close, shaded from sun, and in a moist atmosphere until fresh growth is proceeding freely, when air and light must be gradually and then freely admitted.

If your greenhouse has been kept cool we do not see how you could expect your *Fuchsias* to be in bloom so early. You say you kept them as we desired in an airy closet all the winter. We notice this for the purpose of stating that we should be obliged to correspondents to give us the chapter and verse where such instructions are given, and not to expect, as many seem to do, that we are to wade through the contents of volumes to find what inquirers should find ready for us. Many friends must imagine that we have a peculiar pleasure in hunting up some particular

piece of information they require, and which, if procured by themselves, would make our labours much lighter, though, if we had the time to spare, even in that respect we should be happy to oblige them. We are glad to find the Fuchsias kept so well in the closet; but in the case of such small late-flowering plants they would have been as well in the greenhouse, and not kept so dry as those spoken of with tall pyramidal stems. However, the closet seems to have answered, as they are all alive, though not pushing vigorously. We attribute this to two causes. First, the greenhouse may have been too cool to promote free growth; and secondly, if you have pondered over what we have said about Heaths above, you will perceive that it would have been better if the Fuchsias had been *growing before* you repotted them. You would thus have had the stem and the unchecked, unmutilated roots directed to the forming or protruding of shoots and leaves, and then when repotted these fresh leaves would act in assisting the growth of fresh roots. Keep your plants close and warm in one end of your greenhouse, syringing them overhead frequently if you have no warmer place to put them in, and if your tall-stemmed ones do not break to your mind cut them down to the pot, and select a single shoot when they break there. By such means you will have flowers earlier, but we cannot say you will have them better, than if you waited further in the summer and autumn months. Fine large early-flowering plants, from plants one foot in height to begin with, and flowering late in the autumn, can only be procured by keeping them growing slowly all the winter, and by February and March giving them a temperature and general accessories more allied to a stove or a vinery than a cool greenhouse. See various articles on Fuchsia culture in previous volumes.]

WILD TULIPS.

"By the term 'Wild Tulips' 'A SUBSCRIBER' means some that are indigenous in a wood near where she lives. They are *Tulipa sylvestris*. Some of these Tulips she transplanted into the garden; but, having never bloomed since, she wishes to know if there is any means she could take to induce them to do so. Some that are left in the wood continue to flower, looking like beautiful, drooping, yellow bells, though they, too, seem rather *shy* bloomers."

[Cultivated Tulips are easily removed from all quarters just as they are coming into bloom; but we have no experience about *Tulipa sylvestris*, our only native Tulip—a very rare plant. One would think this Tulip could be as safely removed *when in bloom* as our native Fritillarias, of which we have had "bushels" removed without losing one, or any to signify; but, as you have failed, the next and only plan is to mark them *now*, and to fork them up next August, and transplant them at once where you wish them to bloom. Any bulb which is ripe enough to flower next year in a wild state in England could not be prevented from doing so by moving it to a pot, or bed, or border; but it might not flower the second year from several causes. The *Tulipa sylvestris* is only a naturalised plant, and is known to gardeners as the Sweet-scented Florentine Tulip. There is a double variety. It is found but rarely wild in this country, and in very few places. Another correspondent, signing his communication "A CONSTANT READER," says, "It is found in the meadows of Yorkshire, and in Somersetshire." Our botanical authorities say it has also been found in old chalk pits at Whipsnade, Bedfordshire, on the borders of Hertfordshire; on the top of Muswell Hill, Middlesex; in old chalk pits at Carrow Abbey, near Norwich; in chalk pits near St. Peter's Barn, Risby Gate Street, Bury, Suffolk; near Blackwell, Durham; about Allesley, and in meadows by the bourne at Shustock, Warwickshire; in Bitton meadows, opposite the church, Gloucestershire; and in Scotland near Hamilton and Brechin. We hear, also, that it grows two miles from Gloucester in abundance on a high plateau on the margin of the "mill-stream" running by Hucclecote, under the Chosen Hills, and we would advise the Messrs. Wheeler, of Gloucester, and other florists, to look after it, and bring it to market as a spring flower.]

THE EMPEROR STOCK.

"How long after sowing the Emperor Stock should it be in flower? Also, will it stand wintering in the open ground if sown in autumn?"—W. S. S.

[The Emperor Stock, with the Queen and Brompton Stocks and their varieties, are biennials, which, in former days, used to be sown in the spring of one year to flower at the beginning of the summer of the following year; but, thus early sown, the plants were rendered too strong and too succulent to stand the winter without the protection of glass, which the modern gardener has not yet in his power to spare, and on that single pretext rests the blame, or rather, the national stinginess about Stocks and Gillyflowers. We only grow one plant of them for every thousand we ought to flower. Ten-week Stocks ought to be in flower from the middle or end of May to the last day of the old year, and the biennial Stocks the whole summer long; but until nought is ought we must do as others do, and that is, sow biennial Stocks in June, or even in July, and give them some slight protection in winter. If you sow the Emperor Stock at the end of July, pot the seedlings in October, and keep them in a cold frame, they will bloom early the following year, and with this treatment another sowing of them could be made in the autumn. We can never depend on any kind of Stock to stand the winter in the open ground: we are liable to very severe winters, which cut up the whole race.]

TREATMENT OF CAMPANULA PYRAMIDALIS.

"I was pleased to see the name of the good old *Campanula pyramidalis* brought into notice in THE COTTAGE GARDENER of the 21st. Having had a plant of it last year (the blue) which flowered (but this spring it shows no sign of flowering, but has a great number of offsets), I shall be obliged by being informed the best way to propagate this plant. I have thought, as the stem of the plant is very thick, and the offsets so many, that if good, fine compost is put round the stem the offsets may take root in the compost; or may these offsets, when they have grown stronger, be carefully slipped off, and planted under a cap glass in sandy compost? I have also two plants of the white-flowering; one of them is likely to flower, the other has some offsets like the blue-flowering."—M. F.

[The blue and white old *Campanula*, like the new *Lilium giganteum*, and like all the pyramidal Lobelias, new or old, *never flower twice from the same plant*; therefore a succession of them must be kept either from seeds, as detailed, or from cuttings, which was not detailed. The sprouts on your plants will root as cuttings, and make some flowering plants for the open borders next year, but certainly not such plants as one would like to see in pots. Cut off some of the strongest close to the stem, and cut off the bottom leaves; then let the cut ends dry for a couple of hours before you put them under the glass; and you may earth up the old plants also—some of the shoots may root. September, however, is the best time to propagate this *Campanula*, by dividing the roots as they do old Dahlias, with an eye or offset to each piece; then to plant them out of doors in light, rich soil, and to protect them in winter; then to "look over" such a bed every year towards the end of March, and to pot from it the best, strongest, and most promising plants to flower that summer, and a few *to nurse in pots the first year*, and to make extra fine plants for the following season. Every garden in the three kingdoms ought to have this kind of nurse-bed.]

NUTT'S COLLATERAL HIVES.

"I have had for some years a set of Nutt's collateral boxes, but, although keeping a few hives of bees, have never yet made use of them. I should much like to place a swarm in them this season, but cannot understand how to do it, as the centre box has a loose top and partially open sides, whence the insects can escape while being hived. Any information from yourself or correspondents I shall be thankful for, having consulted several works on that point without success."—APIARIAN.

[You are not the only one who has been at a loss when about to stock a Nutt's hive. The inventor himself was

often accustomed to resort to the very objectionable device of removing the bees, combs and all, from a common hive into the centre box, or, as he termed it, the "pavilion." But we have before remarked that no mode is so eligible for stocking any kind of hive as that by a good swarm in the season. On such an occasion the opening upon the top of the pavilion can be temporarily stopped by slightly screwing down upon it a thin piece of wood or sheet tin. In the construction of these hives two tin dividers are provided, which, when it is desired to cut off the communication, are interposed between the centre and end boxes. These dividers, therefore, previously to hiving the bees, must be secured to the pavilion, on both sides of the latter, either by small screws or some other method. At night, or when the hive is placed on its stand, the screws can be removed, but without otherwise disturbing the dividers, as at first the centre box alone is required. When extra room is needed by the bees one or both of the dividers in succession must be withdrawn, and access to the side boxes is obtained. Upon the theory of *ventilation*, which it was the boast of Mr. Nutt to have discovered, our experience enables us to volunteer a word or two in accordance with the opinions of Dr. Bevan, Mr. Golding, Mr. Taylor, and other apiarians. The former maintains correctly, "It is evident that as high a temperature *at least* is required for comb-building (without which no honey can be stored) as for maturing brood; therefore to reduce the temperature below the breeding heat puts an extinguisher upon comb-building altogether." The innumerable instances of failure in the use of these hives are to be traced to a systematic perseverance in counteracting the laws of nature, by lowering the temperature which the bees are vainly striving to maintain to enable them to carry on their work. Our advice, therefore, to all novices is to discard the ventilators at once, as agents of nothing but mischief.]

PHOTOGRAPHING PLANTS.—REMOVING STAINS OF NITRATE OF SILVER.

"I find the solution of nitrate of silver answers very well for taking leaves, producing a *negative* copy. I find some difficulty in producing a *positive* one. The same solution answers extremely well for copying collodion portraits taken on glass. My object is to copy a water-colour portrait. I cannot get a clear negative with the nitrate of silver, and can produce no impression at all with the solution of potash and copper; the paper does not even change colour, and when exposed in the press with no object to intercept the light it certainly changes, and a very uneven purple tint appears. Can you explain where I am at fault? Ought the paper to be first placed in a solution of salt, and of what kind? You will greatly oblige me by an answer."—WEST HILL.

[If able to photograph a *good negative* from a leaf you ought to produce an equally satisfactory *positive*. In printing positives the exposure to light should be longer. *Water-colour portraits* are mostly executed on paper of a rough texture. From such it is impossible to obtain a *clear negative*. Hold the painting up to the light; you will thus ascertain if it be suitable as a copy. The instructions as to the RED PROCESS are printed correctly. Perhaps you have been supplied with *chromate* instead of *bichromate* of potash. The paper, after exposure in the frame, should produce a faint yellow copy. When the nitrate of silver is applied *every line* of the engraving copied comes out with great sharpness. Salt is used for changing the red photographs into lilac ones.

We congratulate you on your escape from the everlasting round of crochet, buglework, and embroidery. Ladies should make excellent manipulators in photography, which is an art requiring much nicety of touch; but they are generally disheartened at the stains produced by the nitrate of silver. Had we anticipated any *lady* photographers the following receipt would have been inserted before:—

To remove Stains of Nitrate of Silver from the Hands.—Touch the stains with a solution of iodide of potassium, twenty-five grains to the ounce of water; then wash off all traces of the iodide.—E. A. COPLAND.]

STEWARTON HIVES.

"I was in hopes ere this to have seen some more remarks about the Stewarton bee boxes, in addition to those by Mr. Tegetmeier in your paper of April 7th, but such not yet appearing, I venture to add the following to his remarks, chiefly with a view to inviting further discussion respecting them. I, too, have procured a set of the Stewarton boxes, and think them very cheap. In fact, I do not doubt that most apiarians would gladly pay a few shillings more for certain improvements which seem to me to be wanted in them—I mean, especially, in the thickness of the boards, which in mine are very little, if any, thicker than *half an inch*. Have the boxes been tried with only this thickness of boards, or will not the bees be liable on this account to suffer much, unless very well protected, both from the heat in summer and the cold in winter? If they have been proved this is satisfactory; but the boards are at least half an inch thinner than what are recommended by Bevan, Taylor, Payne, &c. To those who may think with me on this point, let me suggest that a remedy may be applied by nailing half-inch boards with the grain crossing that of the boards of which the boxes are made, *in the inside*, on every side except where the windows are, and where the sides are thicker. This will stop up the space of communication with the upper box between the two bars nearest the sides; but this will be of no consequence if, by guide combs properly placed, the bees are induced to commence to work from the middle bars. The cross bars seem unnecessary, especially in hives so shallow. They are, however, easily removed by those who object to them. A bottom board to each set also seems a great desideratum.

Few experienced apiarians, I believe, like the entrance to the hive in the hive itself, but rather in the bottom board. This evil (as it seems to me) may be remedied by nailing with small nails the entrance slides to the boxes. I have thus stated my opinion, not, I trust, dictatorially, about the Stewarton hives, but rather with a view to having it corrected if wrong. Not having before used a bar-hive I wish to inquire whether it is *very essential* that the small piece of comb attached to the bar should have the right dip or inclination of the cells? If the small piece of comb were placed wrong in this respect, would not the instinct of the bees prompt them to correct this as they went on building along the bar? As two boxes are to be used in hiving a swarm, is it necessary to fix guide combs to both, or only to the upper one? If the right inclination of the cells is of great importance, how is it most certainly ascertained in combs that have been removed from the hive and broken up into small pieces?

"I must not close my remarks without thanking you for your efforts to establish an Apiarian Society. If it does not succeed it will be a disgrace to the bee-keepers of Great Britain. As far as anything I can do may avail I shall be very glad to join it, and do what I can to promote its success."—A COUNTRY CURATE.

[We forwarded the above communication to Mr. R. Eaglesham, of Stewarton, Ayrshire, the manufacturer of the hives, and this is his reply:—

Thickness of Boards.—After twenty years' experience half-inch has been adopted as most suitable; it gives sufficient strength for the purposes required, and leaves the boxes light, which is a consideration in handling them, and of importance when carrying them about. I have known scores of hives of this thickness exposed out of doors during the last ten years, protected by a sheaf of straw, and not one of them has suffered from the extremes of heat and cold, and I should think our temperature varies as much and as suddenly as anywhere. The cover is made of a sheaf of thatch drawn into a point at the top, such as farmers finish stacks with. It costs only a few pence. In sultry weather, if unshaded by trees or bushes, we erect a temporary shade by putting a piece of cloth on two poles to throw off the direct rays of the sun. When the hives are kept in a house we throw an old rug or some such thing over them in severe frosty weather.

Cross Bars.—These may be dispensed with in stationary hives; but we find them serviceable in keeping all right when moving the hives to and from the moors, &c.

Entrance to Hive.—Having no experience of those cut from the floor board I can say nothing on this subject.

"We never place *guide comb* in the boxes into which a swarm is first hived. We give them clean empty boxes only.

If we had a superabundance of boxes containing old comb we would let them have one to begin with. Guide comb we place in the honey box only, taking care to place it as straight and parallel with the bars as possible.

"I am not clear about the 'dip' or inclination question."
—R. EAGLESHAM.]

CULTURE OF RICHARDIA ÆTHIOPICA, OR ARUM LILY.

"I have some very fine plants of the Arum Lily, which have produced six blooms each this year. What is best to do with them? I have seen them planted out and potted in the latter part of the summer. Do you advise me to do so?"

"In reading your valuable paper I have been a little surprised at not seeing Pansies recommended for filling flower-beds in spring. I have a bed or two every season of some good old sorts, and they really look quite cheerful and very pretty."—W.

[There are two distinct methods which you may follow out with the "Arum Lilies," or *Callas*, or *Richardias*, as they are sometimes called: you can keep them in the pots till they ripen the leaves some time in the summer, and then let them go to rest. Once you have got them at perfect rest you may keep them dozing for ten months if you choose to do so; or you may plant them out in rich ground, after hardening them, towards the end of May; but then they will go to rest after ripening the leaves, or before ripening them if they experience a sudden check, and either way they will resume their growth naturally in October, because they are in moist ground. If you water them in pots in October they will start into growth; but if you keep them dry in October and on till the new year they will not offer to start. Now, weigh the two modes in your mind's eye, and see what are the advantages or disadvantages each possesses. You say you have some very fine plants, which produced six blooms each this season, but you will not see their blooms again till 1858; while our Arum Lilies blow twice every year of our lives—in the spring and in the autumn; but yours will not blow this autumn most certainly. Ours will, however; and if you take a leaf out of our book your Arum Lilies will do as ours have done for ever so long. Keep one half of your plants in the pots, and keep the pots dry till this time next year, or at least to the end of March, then water them, but keep them cool, and they will not rest till the end of the following autumn. After that one half of your Arums will be beginning to grow when the other half are at their *nods*, and when the one is in full growth the other is as fast asleep as a badger in winter. Shake them out of the old soil every time they begin to grow, both from the open ground and in pots, and plant the large roots only for flowering; the small and half-small ones will begin growing at different times, and by taking advantage of the difference with a large stock one might have Arum Lilies in bloom every month in the whole year. We ourselves have seen them do so as comfortably as in the spring.

We hope to be able to point out some Pansies this season which bloom from May to October, and which make beautiful flower-beds or edgings.]

HEATING A PIT.

"The pit is chiefly for growing plants for the flower garden, and to grow Melons. In summer there will be a partition, so as to have either only the one part or all of the pit heated at once. Of course there must be stop-taps in the pipes. I want to know what pipes would be required for top and bottom heat."—A CONSTANT READER.

[It is always best to be precise. We know nothing of the size of your pit. It may be six feet, or nine feet, or twelve feet in width, and a length of six lights or sixty. Presuming it is moderate in size we would recommend Thomson's amateur's retort boiler, or one of Rogers' conical boilers. If the pit has a great many lights, then Weeks' tubular boiler, or a triple retort of Thomson's. It is difficult to combine the *cheapest* and the *best*. For bedding plants in a pit nothing is cheaper and better than a small flue. We will venture further, and say that nothing will beat it for a small place. With a strong flue below a bed we have also grown

splendid Melons. We could likewise have a flue so that it could traverse the whole length of the pit, and return or go through only a part of it at pleasure; but there is more trouble with it, though we think not more expense, nor so much as with pipes, and these, no doubt, will be preferred. If the pit is about six feet in width, and you want early Melons, you would require two four-inch pipes above, and two three-inch pipes below. If you mean to have several divisions, fine taps for top and bottom, and to have the circulation of each department perfect in itself, it will cost no little money. The cheapest plan, where the pit is long and in many divisions, would be to place the border at one end, and always heat a division there first, and have the circulation there perfect, top and bottom. We would connect this with the next division with one-inch lead pipes, and with good common beer-taps fixed in them to turn at pleasure, which would avoid the expense of boxes and patent plugs. We have some pits heated by hot water, and each of these pits is in several divisions; but we have no taps at all, so that we must heat one pit throughout at a time, having the power of shutting it off from the other at pleasure. We may lose a little heat at times by heating one range at once; but then, if we do not at once have things right throughout that require the same treatment, that is easily remedied by giving more air in one division than another. At a little loss of heat we thus save a deal of bother. Where top and bottom heat are always required the best plan is to make the top pipes flow-pipes, and bring them under the bed back again as return-pipes. If our correspondent has only two divisions he had better have his border in the centre, and then by taking the main flow-pipe into an open cistern he can take pipes for top heat and bottom heat right and left from that cistern at pleasure. As the expense will only be a little more he may prefer being able to give bottom heat or top heat at pleasure. For instance, in a sunny day, and if the bottom heat was rather defective, the top heat might be shut off altogether for some hours. If pipes are used for bottom heat they should be surrounded with open rubble, broken bricks, &c. Many answers have been given to kindred inquiries.]

ANGLE PROPER FOR A GREENHOUSE ROOF.

"I am building a greenhouse eleven feet long, seven feet six inches high at the back, and five feet high at the front. Do you think that a sufficient slant for the roof? I bought the book called 'Greenhouses for the Many,' which tells me 30° is a good angle. Now, I do not understand that, so oblige me by an answer."—AN AMATEUR FLORIST.

[You say nothing of the width of your house; but, supposing it to be ten or twelve feet, we should prefer eight feet high at back. In a previous volume we showed how the French and English calculated angles differently—the one coming from the base of the quadrant, and the other from the perpendicular line. Thus 30° with the French would be 60° with us. The less the width of your house the less height you will require to go in order to secure a certain angle of inclination. Thus, supposing you had a house twelve feet wide, and wished a roof at 45°, you must have your back wall twelve feet higher than the front one. If your house is twelve feet wide, and the back wall three feet higher than the front one, then the angle of your roof will be about 76°, or a little steeper than a garden frame, steep enough to throw off water. If your house is only nine feet wide your roof will be steeper still, about 70°. To find the angle with a quadrant in a moment fix a string and weight in the angle of the quadrant, the string long enough to reach beyond the marked quadrature; place that side of the quadrant that has 90° in the corner of the quadrature against the real or supposed line of your roof, and the plummet will hang against the number in the quadrature that will show the angle of inclination. For greenhouses with upright glass in front from 55° to 75° are very good inclinations. The angle of a garden frame is about 80°. Our continental friends calculate mostly from the other side of the quadrant that begins with 1° in the corner, and therefore with them a frame would have an inclination of 10°, and a greenhouse at 30° would be the same inclination as one of 60° with us. The context shows generally which mode is adopted.]

THE PEACH TREE.

(Continued from page 71.)

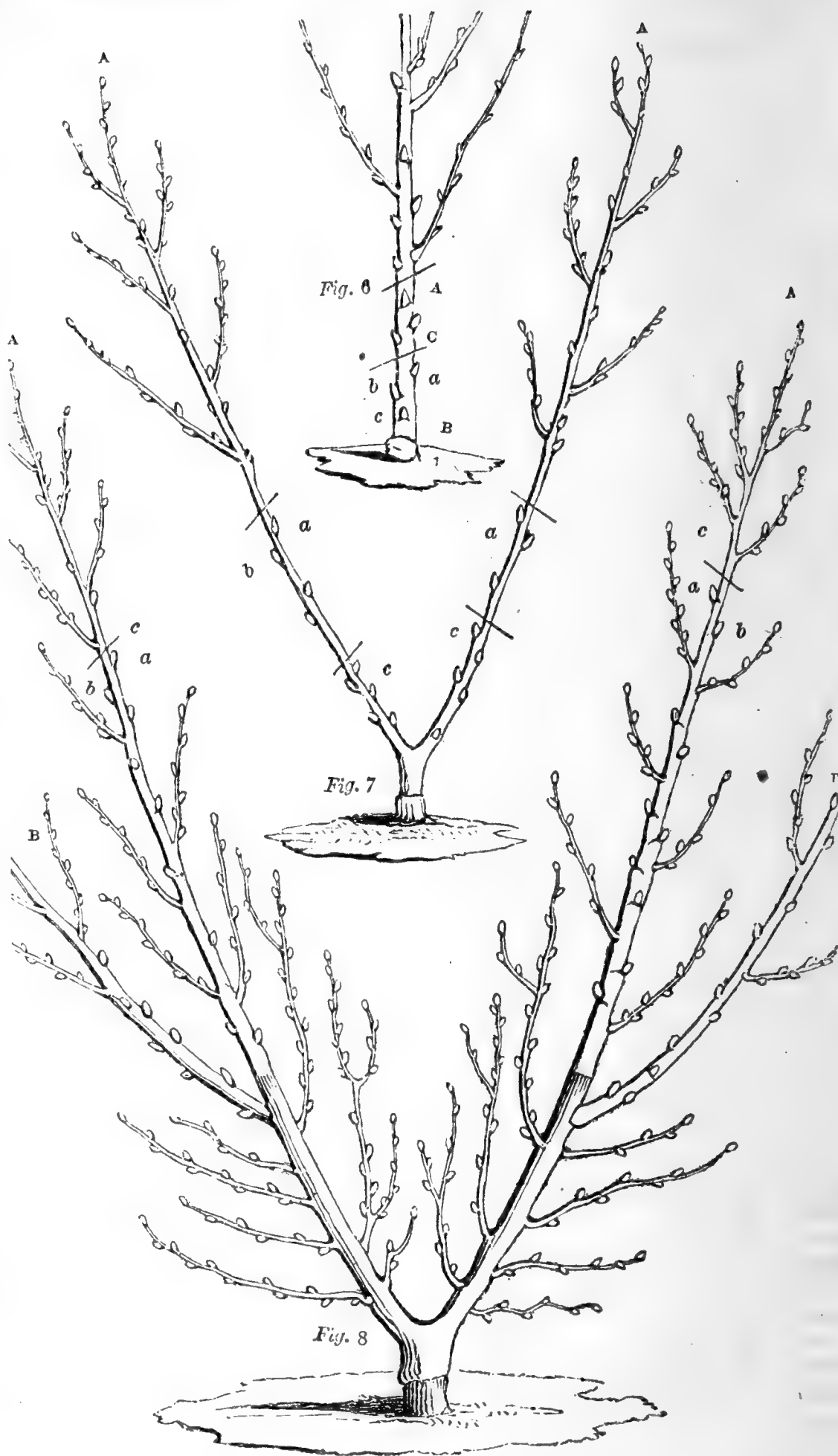
PLANTING.

For a new plantation we lay out a border at the foot of the wall five feet six inches to six feet six inches in breadth, according to our space. A good quantity of well-rotted dung is laid on; the ground is trenched to the depth of eighteen inches or two feet, and the soil must be well broken and equally mixed with the dung throughout. Many are in the habit of digging the holes three weeks or a month before planting. I never practise this myself, and I advise no one else to do so. The season for planting is commonly attended with sudden cold rains, which sometimes fill the holes, rendering the earth so wet and cold as to prove injurious to the roots; but such is not the case when the holes are made at the time of planting.

Everything being prepared we plant in the course of November. The soil of the border having been newly worked it is sufficient in good light soils to make holes one foot square (better two feet square) and two feet deep; but when the soil is of a clayey or damp nature the holes must be two feet square and three feet deep, and the earth before being filled in must be rendered light by mixture with good garden mould. This method is to be preferred to that of planting in March, which has the great inconvenience of causing a loss of valuable time to the tree, which, when planted in November, is ready to vegetate the first fine weather in spring; but when planting is deferred till March the vegetation of the tree is often retarded by the drying winds so prevalent at that season. The plants called *eighteen-months* are preferred for planting. They are so called from having been eighteen months budded, or nearly so long. Trees which have been thirty months budded, and which have been cut back upon a lower eye, and of which the roots are much larger and less fibrous than the former, are not so good; still, in some particular cases, they are not to be rejected; for instance, they often take root better in new ground.

Whilst the holes are being dug the roots are trimmed, that is, their bruised extremities are cut with a sharp pruning-knife, and so as that the cut surfaces may rest upon the earth when the tree is planted. At the same time its head is taken off at from eight to nine inches above the bud to allow of planting it with a sufficient inclination, so that the stem may touch the wall; whilst the roots are so far from the foot of the latter as not to be cramped in growing by the foundations. See Fig. 6, which represents the tree before being planted. It is headed back at the point A.

The tree is fixed in its place at six and a quarter inches from the wall, and not deeper in the earth than it was before. It is so placed that the eyes *a* and *b* of the bud may be at each side, and not before and behind, without heeding the position of the original bud. It is of little moment whether the latter be turned one way or the other, provided the eyes be properly placed. For the formation of a fine tree in a short time this precaution is of greater importance than most people suppose. Gardeners usually plant their trees with the budded part in front, without paying the least attention to the position of the eyes. The following spring, when the tree shoots, they are astonished to see the greater number of trees thus planted with eyes before and



behind; whilst those planted as I have directed have their eyes well placed, one on each side. When the tree is in the proper position the roots are carefully spread out, and then covered over to the height I have directed, or at least in such a way that the bud *b* may be kept out of the earth.

A space of twenty-six feet is left between those Peach trees intended to be trained in the square form. When a Peach and a Pear are to be planted alternately there should then be a distance of thirty-nine feet between them. The intermediate spaces may be usefully employed by planting between each Peach and Pear tree a young tree, which can be brought up till three years old, and which may be employed to make a fresh plantation, producing a crop in a short time.—(*Horticultural Society's Journal*.)

GOLDFUSSIA ISOPHYLLA.

THIS is *Ruellia isophylla* of gardens, and is a small shrub, requiring a hothouse. It resembles the now common *Goldfussia anisophylla* in general appearance, but having all the leaves of equal size, and a less straggling habit. The leaves are narrowly lanceolate, tapering to the point, slightly serrated. The flowers usually appear in threes at the end of a rather slender, short, axillary peduncle. Their calyx is very unequal. The corolla has quite the form of *G. anisophylla*, is very pretty, pale violet, with dark violet herring-bone veins on the tube at the back of the lobes. The stamens are inclosed within the tube, stiff, erect, hairy on the outer side. The two larger anthers have hemispherical fleshy connectives, on which is planted a pair of deep lobes, one above the other, each opening towards the side of the corolla by a pair of valves; the smaller stamens are almost rudimentary, stand at the foot of the others, and are firmly united to them, so that this plant is at once didynamous and diadelphous. The ovary is oval, tipped with glandular hairs, and seated in a fleshy-toothed disk; each cell contains two superposed ascending ovules. The stigma forms one side of the end of an acuminate style, and is therefore perfectly simple.—(*Horticultural Society's Journal*.)



GARDENING AT THE NORTH POLE.—When the late Sir. E. Parry was wintering in the Arctic circle during 1821 scurvy, the great enemy of the polar voyager, was kept at a distance by the use of antiscorbutics, liberally supplied to the expedition. To these was added a regular growth of mustard and cress, in boxes filled with mould, which, owing to the superior warmth of the ships, was now carried on on a larger scale than before. An amusing incident is connected with the preservation, during the voyage out, of the mould in which these vegetables were grown. While the ships were detained at Kirkwall a boat came off to the "Fury" with some sacksful of earth, which the ship's carpenter (an Aberdeen man, who had formerly belonged to the merchant service) was ordered to stow away below. At this he ventured somewhat to grumble, and to question the utility of the article in question. "Never mind!" says his mate, John P——, from whom the account comes, "never mind! Depend on it the Captain has something in his head, and it'll be all right!" The obnoxious sacks were, accordingly, stowed away, but, during the voyage across the Atlantic, they proved too much for the carpenter's patience, and, at length, he ordered P—— to throw the lumber overboard, as a mere fancy on the part of the Captain, no longer remembered. P—— shook his head, but his superior was determined, and away went the bags, not, however, into the sea, but, at all events, out of sight. Days and months passed, and the affair was forgotten. Winter Island was reached, and the ships were frozen in. One day an order was given to the carpenter to provide some long shallow boxes. This done,—“Now then, my man,” says the Captain, “for those sacks of earth!” Down comes the unfortunate carpenter to his mate, in a state of ludicrous perplexity. “Eh! P——, but what will we do, man?—Here's the skipper singing out for the sacks we heaved overboard!” “We, indeed!” says P——, “but, never mind, it's all right; they never went overboard at all!” and, doubtless, many of his messmates had cause, at Winter Island, to be grateful to him that it *was* all right.—(*Memoirs of Sir W. E. Parry*.)

PRUNING OLD TREES.

IN a recent number Mr. Robson gives us advice about pruning old trees. Wishing to be of some service in this matter, and knowing how much practical working is of use, I am induced to send my experience, hoping to benefit those placed in similar circumstances.

When I was in Scotland I had an orchard containing about 200 trees, principally Apples and Pears, and a few Plums. These had not seen the pruning knife for twenty-five years, were covered with moss, bore but little fruit, and that of a very inferior quality, being both small and deficient in flavour.

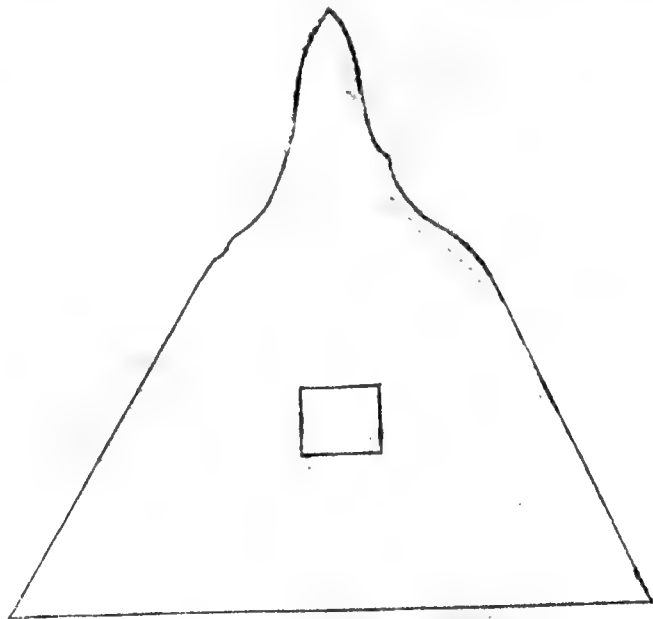
The undergrowth was pasture, very mossy, and full of small nettles.

The treatment I adopted with the latter was as follows (I entered into possession in May, too late to touch the trees that season):—I let the grass grow, and cut a small crop in July. I then let it lay at rest for three months, when I put sheep upon it until the 1st of February. I then passed it over twice with a machine I invented at the time, called a “Fog Cleaner,” which in its action tore up the nettles and moss by the roots, carrying them along with it. In April I sowed broadcast “common washing soda” pulverised, one cwt. to the acre (the orchard was nearly four acres), mixed with 20 bushels of soot. I cut in July, and the crop was very heavy, the undergrowth being fully two feet in height, and the high grass nearly double this. The difference between the two years was as follows:—

First year, weight of grass 150 stones of 22 lbs. each. Sold at 4½d. per stone.

Second year, weight of grass 245 stones of 22 lbs. each. Sold at 8d. per stone.

With regard to the trees, I pruned them thoroughly, old as well as young, and then by the adoption of the following scraper, to which a handle was attached, I scraped all the trees in the orchard from the moss and dirt which had accumulated upon them. Those trees that had holes I scraped out with the pointed end of the scraper, and afterwards filled the hole with tar and resin, put on cold. Those stumps that were left were coated over likewise, to prevent bleeding.



The four principal rules adhered to were—

1. Not to allow any branch to cross another.
2. To study the habit of the tree being pruned, and as near as possible to cut accordingly.
3. To have the Apple trees well cut out in the centre, something in resemblance to an umbrella.
4. To cut away an under branch before an upper one.

Difference in produce between the two years:—

First year, Apples and Pears 5½ bushels.

Second year, Apples and Pears 185 bushels. Sold at 3s. per bushel, average.

Thus the gain upon the whole by the above treatment was considerable.

	£	s.	d.
Cost of soda, 4 cwt. at 6s.	1	4	0
20 bushels of soot at 6d.	0	10	0
Pruning trees	7	3	4
	<u>8</u>	<u>17</u>	<u>4</u>

	£	s.	d.
Hay sold for	8	3	4
Apples „	27	15	0
	<u>35</u>	<u>18</u>	<u>4</u>
Deduct	8	17	4
Gain	<u>27</u>	<u>1</u>	<u>0</u>

I have not added the 18s. I received for the sheep grazing. My ideas were taken from the reading of Professor Johnson's Agricultural Chemistry.—W. H. WARNER, *Oaklands, Ross, Herefordshire.*

FINE SPECIMEN OF DENDROBIUM FIMBRIATUM.

In one of the plant houses at Chatsworth there is now in bloom a marvellous specimen of *Dendrobium fimbriatum*. This Orchid was imported from the East Indies in the year 1818, and is now eight feet in diameter and four feet in height. It is bearing the enormous quantity of 250 spikes of flowers. Each spike has from ten to twelve blooms. It is indeed a magnificent sight, worthy of any amateur's or admirer of flowers' time to travel miles to see it. Standing as it does at one end of the old aquatic house, elevated, and surrounded by various exotics, if viewed from the opposite end of the house its drooping branches seem to be overburdened with the weight of flowers. It appears to the eye like one sheet of gold, and is considered the finest specimen in England.—A FRIEND.

NEW BOOK.

THE VEGETABLE KINGDOM.*—We promised last week to publish an extract from this work, with a specimen of the illustrations. We now do so, and with increased satisfaction, for a more attentive perusal confirms our first impression that it is the best and will be the most popular work that has ever been published in English on the natural arrangement of plants, their qualities, and uses.

“Order II.—DILLENIACEÆ—THE DILLENIACEÆ FAMILY.



Fig. 18. *Hibbertia grossulariaefolia*.

“This order is composed of trees, shrubs, or under shrubs, some of which are climbing. The *Leaves* are alternate, very rarely opposite, simple, without leaflets at their base, which is frequently widened, and forms a sheath round the stem; they are rough and leathery, sometimes entire and sometimes toothed, and furnished with strong veins, which run straight from the mid rib to the edge. The *Flowers* are either solitary or in clusters, sometimes opposite to the leaves. In some the stamens and pistils are in the same flower, and in others separate. The *Calyx* is permanent, with five deep segments, two of which are exterior, and three interior. The *Corolla* is commonly of five petals, the margins of which are placed one over the other (imbricated) and inserted beneath the ovary. The *Stamens* are very numerous, indefinite in number, either distinct or arranged

* *A Natural History of the Vegetable Kingdom and its Products* By Robert Hogg, Esq. W. Kent and Co., London.

in several bundles, and inserted under the ovary. The *Ovaries* (young seed-vessels) are indefinite in number, distinct, one-celled, each terminated by a style or simple stigma. The *Fruits* are distinct or united, fleshy or dry, and opening on one side, containing one or many *Seeds*, which are fixed in a double row to the inner edge of the seed-vessels, surrounded by a pulpy aril, Fig. A (seed of *Pleurandra furfuracea*). The *Embryo* is placed in an erect position on the base of the fleshy albumen, Fig. B.

"This family is divided into two tribes—*Delimeæ* and *Dilleneæ*.

"**TRIBE 1. *Delimeæ*.**—Filaments of the stamens widened at the apex, bearing on both sides the cells of the anthers, which are separated. These are chiefly natives of America, few of them being found in Asia and tropical Africa.

" GENERA AND SYNONYMES.

<i>Curatella</i> , L.	<i>Davilla</i> , Velloz.	<i>Wahlbonia</i> , Th.
<i>Pinzona</i> , M. & Z.	<i>Hieronima</i> , Fl. Fl.	<i>Rohlinia</i> , Dnst.
<i>Doliocarpus</i> , Rol.	<i>Delima</i> , L.	<i>Trachytella</i> , D.C.
<i>Calinea</i> , Aubl.	<i>Tetracera</i> , L.	<i>Actæa</i> , Lour.
<i>Soramia</i> , Aubl.	<i>Tigarea</i> , Aubl.	<i>Calligonum</i> , Lour.
<i>Mappia</i> , Schreb.	<i>Rhinium</i> , Schrb.	? <i>Recchia</i> , Moc. &
<i>Othlis</i> , Scht.	<i>Euryandra</i> , Forst.	<i>Sess.</i>
<i>Empedoclea</i> , St. H.	<i>Assa</i> , Houtt.	

"**TRIBE 2. *Dilleneæ*.**—Filaments of the stamens not widened at the apex, bearing on both sides the cells of the anthers, which are elongated and strong. These are natives of Asia and Australia.

" GENERA AND SYNONYMES.

<i>Capellia</i> , Bl.	<i>Clugnia</i> , Comm.	<i>Cistomorpha</i> , Cly.
<i>Colbertia</i> , Sal.	<i>Lenidia</i> , Thou.	<i>Pleurandra</i> , Lab.
<i>Reifferscheidia</i> , Prl.	<i>Schumacheria</i> , Vhl.	<i>Candollea</i> , Lab.
<i>Dillenia</i> , L.	<i>Pleurodesmia</i> , Ar.	<i>Pachynema</i> , R. Br.
<i>Syalita</i> , Ad.	<i>Adrestia</i> , DC.	<i>Hemistemma</i> , Com.
<i>Actinidia</i> , Lindl.	<i>Hibbertia</i> , Andr.	<i>Aglaja</i> , Nor.
<i>Trichostigma</i> , St.	<i>Burtonia</i> , Sal.	<i>Acrotrema</i> , Jack.
<i>Wormia</i> , Rottb.		

"**GEOGRAPHICAL DISTRIBUTION.**—The majority of the *Dillenia* family are found in Australia, the East Indies, and the tropical parts of South America.

"**PROPERTIES AND USES.**—The whole of this family possess more or less of astringent properties. *Curatella sambaiba* is used in the Brazils for tanning skins, and also as a decoction for washing wounds, and the leaves of *C. Americana* are so rough that they are used in Cayenne for polishing wood. The Brazilians also use the pliant stems of *Davilla rugosa* to make bands, and a fomentation of the leaves for allaying swellings of the legs, so common in hot countries. In Minas Novas the natives wash wounds with a decoction of the inner bark of *D. elliptica*, which they call *Cambuinha*. *Tetracera tigarea* and *tomentosa* are called in Cayenne *Liane rouge*, from the decoction colouring water of a red colour, and are considered by the natives as antisphyllitic and diuretic. The fruit of *Dillenia speciosa* is eatable, though very acid, and requires sugar, broth, or some other addition, to make it palatable. The acid juice of the fruit with sugar is used in India, mixed with water, as a cooling beverage in fevers; and when the fruit is added to the syrup, Rheede says it is considered useful as a cough mixture. The ripe fruits are said to be laxative, and even to produce diarrhoea. The young calyxes of *D. scrabella* and *speciosa* are used in curries by the inhabitants of Chittagong and Bengal on account of their pleasant acid taste; and the fruit of *D. elliptica* is eaten either in a crude state, or, when ripe, used as a sauce with fish by the natives of Amboyna. The foliage of many of the species of this family is so extremely rough that it is used in Europe for the same purposes as fish-skin and sand-paper, while in China the leaves of *Trachytella aspera* are employed even for polishing metals."

PELARGONIUMS OR GERANIUMS.

THE culture of these indispensable ornaments of the greenhouse has been so frequently discussed in our pages that I refrain from a lengthened essay this season. The list below has been carefully selected, and the varieties named have received the approbation of one of the best judges in England, as well as my own

judgment in their favour. Now is a good time to order them from the nurserymen.

TWELVE NEW SELECTED GERANIUMS.

1. *Agnes* (Hoyle).—A large free-blooming variety, very constant, ground colour a clear warm pink, with a medium-sized black blotch on the upper petals, and a clear, well-defined white eye in the centre. A striking variety, whether seen on the stage at home or on an exhibition table.

2. *Conspicuum* (Turner).—A spotted, distinct variety; lower petals rose, top petals rose, shaded off with rosy lilac to the margin; the five petals have each a large, rich, velvety spot of dark maroon. This is so good a variety that every greenhouse, however small, ought to contain a plant of it.

3. *Emperor* (Beck).—A very rich dark flower, dark crimson scarlet lower petals, whilst the upper are of the darkest maroon colour. A richer-coloured flower can scarcely be imagined.

4. *Hermione* (Hocken).—The last-named variety is remarkable for its dark colour; but this, as a contrast, is equally remarkable for its pure white. The upper petals have on each a medium-sized dark spot. It is a free bloomer, and of a good form.

5. *King of Scarlets* (Turner).—The Royal Botanic Society offer a prize every year for the best seedling florists' flower of this class that approaches the nearest to a true scarlet. This King of Scarlets obtained the prize last summer, and is decidedly superior to any that have won the prize in former years. Colour clear, form and habit good.

6. *Marvellous* (Hoyle).—A striking dark flower, of good properties; upper petals rich maroon, with an even margin of carmine; lower petals scarlet, veined with rich crimson. A large free-flowering variety.

7. *Miss Foster* (Turner).—Clear white centre, deep rosy crimson bottom petals, and rich maroon upper petals, with dark scarlet margin. If it has a fault it consists in the petals being rather long. It is, however, a fine distinct variety.

8. *Mr. Hoyle* (Turner).—A novel, showy, spotted variety; warm, rosy pink, with rich maroon spots on all the five petals, shaded with bright orange. Distinct and beautiful.

9. *Spotted Gem* (Turner).—An excellent spotted variety, of good form and substance; colour a soft rosy lilac, with a well-defined dark spot on each petal. Full size, good habit, and very constant.

10. *Prince of Prussia* (Turner).—A large attractive flower, rich scarlet lower petals, dark maroon blotch on the upper petals, and margined with scarlet.

11. *Review* (Hoyle).—This variety has the merit of coming early into bloom. Distinct orange scarlet, shaded with crimson. Brighter than Carlos, which it rather resembles.

12. *Viola* (Hoyle).—This variety is an acquisition on account of its novel, distinct colour, namely, delicate lilac lower petals, dark maroon upper petals, edging first with carmine, and the extreme edge a line of lilac. Free bloomer, smooth petals, and constant.

(7s. 6d. to 31s. 6d. each.)

TWELVE SELECTED OLDER VARIETIES.

1. *Admiration* (Hoyle).—Lower petals pink; upper petals bright carmine, margined with pink.

2. *Admirable* (Turner).—Lower petals rose, white centre; upper petals with a large dark blotch, margined with rosy pink; smooth petal and good habit.

3. *Conqueror* (Beck).—Crimson scarlet, with rich maroon spot on the upper petals, margined with crimson. Good.

4. *Carlos* (Hoyle).—Free bloomer; good habit, with

large trusses; mottled rose lower petals; upper petals darkly spotted and margined with carmine.

5. *Governor General* (Dobson).—White centre, deep rose, tinted with orange; free and constant.

6. *Lord Raglan* (Hoyle).—Orange scarlet colour; striking, distinct, and good.

7. *Lord Cardigan* (Turner).—Dark, with scarlet margin; lower petals bright crimson.

8. *Meteora* (Foster).—Bright orange scarlet, with rich dark spot on the upper petals; very smooth petal; free bloomer and constant.

9. *Serena* (Hoyle).—Lower petals shaded purplish rose; upper petals nearly black, evenly margined with purplish carmine. Very distinct and good.

10. *Topsy* (Hoyle).—Bright shaded rose lower petals; upper petals nearly black, with a large white centre.

11. *Una* (Hocken).—A free-blooming white, very large truss, with a rich carmine spot on the upper petals. A good exhibition variety.

12. *Wonderful* (Hoyle).—A good variety, of excellent form; lower petals rose, shaded with orange; rich velvety maroon upper petals; large trusses, and a free and constant bloomer.

(2s. 6d. to 5s. each.)

T. APPLEBY.

(To be continued.)

OLD VARIETIES OF FRUIT WEARING OUT.

MUCH discussion has arisen of late on the deterioration of certain favourite fruits, or what is more generally understood as the *wearing out* of certain varieties which at one time stood in the foremost rank. That such a "wearing out" has been and is going on I believe there are not ten practical men in the kingdom will deny,* but there are some points connected with it which render it difficult to reconcile with other events of a like nature. I therefore make no apology for noticing a few of them.

Beginning with STRAWBERRIES, it is somewhat odd that *Keens' Seedling*, a variety that has done thirty years or more hard service, should be as healthy and vigorous as ever, and is by far the most popular variety we have, while *Wilmot's Superb* and some others which followed it are now nowhere to be found. It is, perhaps, wrong to infer that these were worn out; but if we come to a much later variety, *Myat's British Queen*, we see unmistakable tokens of an exhausted constitution, for there are many situations it cannot be made to grow in even by all the careful treatment that can be devised, whereas a few years ago it answered moderately, though never so vigorous, certainly, as *Keens' Seedling* and some others. Maybe some will be saying that it came first into existence with a debilitated constitution, and consequently cannot survive long. If that be admitted the key of the whole argument is surrendered, for it is only a matter of time whether a variety lasts five years or fifty years, or whether one lasts the former period and another the latter.

Human and animal life is governed by like laws, and doubtless a time will come when *Keens' Seedling* will cease to be as healthy, prolific, and useful as it is now; but we hope to see its place taken by others of equal if not superior merit. Other examples of Strawberries might be given, but we pass on.

GOOSEBERRIES.—There being no lack of good varieties of this fruit, few care what becomes of the old ones; but one old favourite kind is certainly consumptive, the old *Warrington*, or what, in the north of England, is called the *Ashton Red*. The limited growth and unhealthy appearance of this tree convey the lesson

that it has got one foot in the grave. Another favourite old sort, the *Green Gage*, is still farther advanced in disease, and though the *Warrington* is still grown, because it has established a name which we are unwilling to part with, there are few extensive plantations of it now, and the *Green Gage Gooseberry* is all but extinct amongst those who grow for the market. Perhaps the most common one grown about here (*Staplehurst*) is a rough yellow one, early, but of no other merit than being a heavy bearer, and the buds on its shoots are less tempting to small birds than those of other kinds. Large Reds, Greens, and Whites are also grown, but few *Warringtons*.

Passing over Currants and Raspberries, the varieties of which are too few and less noticed to afford examples either of endurance or otherwise, we come to the larger fruits, which furnish by far the most decisive proofs of "wearing out."

PEARS.—Whoever has seen two or three good crops in succession of *Gansell's Bergamot*, the fruit being also good? or where is the *Crassanne* grown as perfect as it was thirty years ago? Probably thirty years hence the *Jargonelle* will be a fruit known only to history, for healthy trees of this variety are few and far between. Many other useful old varieties are fast approaching the same end. *Green Chissell*, *Autumn Bergamot*, *St. Germain*, *Crawford*, and *Chaumontelle* are rarely met with in the healthy condition they were some years ago; and assuredly we cannot attribute their decay to any other source than the debility of the tree, the soil, treatment, and other things being the same as before.

APPLES.—This is the fruit so often referred to for examples, and numerous old kinds are significantly pointed to as affording decisive proofs of decay. The old *Golden Pippin*, *Golden Reinette*, several of the *Pearmains* and *Codlins*, and a host of others are no longer to be met with in the healthy, profitable, bearing condition they once were, while some are discarded entirely. The *Ribston Pippin* and *Golden Knob* are fast following to the same end, and would, perhaps, have been extinct before, only they being particular favourites have been propagated wherever there was a chance of their succeeding; still the supply of them is daily diminishing, and in a few years *Ribstons* will cease to exist in very many places. To account for this on any other score than that of "wearing out" I confess to being unable, and to suggest a remedy or preventive would be only recommending what had been done over and over again with successive disappointments.

As it is needless to multiply examples it is only necessary to take a glance at the condition under which fruit trees are grown. Apples, for instance, are the offspring of Crabs, the best kinds being the produce of repeated sowings of the seeds of improved varieties; but be it remarked that this *improvement* cannot be effected without in some way sacrificing the constitution of the plant, and, like the *breeding in and in* of animals, a delicate race is the result, differing more or less in degree as the case may be, yet still bearing tokens of that effeminacy resulting from the artificial position a grafted tree is in. This would be still more so were it not for the vigorous nourishment it receives from the hardy stock it is worked on. Still this is not sufficient to maintain in good health scions taken from aged or long-propagated varieties, and each succeeding generation getting weaker, an abandonment of the whole takes place, as is the case in the old Apples no longer cultivated. Some varieties threaten to be very short-lived; the *Hawthornden Apple*, for instance, is seldom seen in good condition, and is often a complete mass of canker.

Now, the obvious lesson taught by the above is to cultivate only the varieties known to be healthy and good,

* We know some first-rate authorities who deny that fruit trees wear out.—ED. C. G.

and, where they lack flavour or some of the other good points of old favourite sorts, let well-directed skill be employed in the raising of other varieties which may equal if not excel any hitherto known. We have had enough of old kinds; and, though it is unkind and ungrateful to discard old friends, we cannot well retain all who are a burden to us; and, be it remembered, old Apples and Pears were often the compeers of our ancestors, and are consequently excusable if they fall short in the utilitarian principle which governs the dealings of the present day. If there be any one who disputes the liability of all cultivated varieties of fruits, perpetuated as they are by budding or grafting, to fall into irremediable decay, let him point out instances where the old kinds have been retained in health and utility when the trees have arrived at maturity. Until then I, for one, must class all the improved varieties of fruits with fallen mortality, and whether the utmost that each specimen may attain be three hundred years or three score and ten, the time for each is sure to come, and usually, in both cases, preceded by disease.

J. ROBSON.

TO CORRESPONDENTS.

EMIGRATION TO AMERICA (*John Thomas*).—We have no information on this subject. If you have friends out there write to them for information. Emigration for employment on speculation is a risk no sensible man would incur.

WIREWORM (*J. G. F.*).—There is no mode of destroying these wholesale, except by paring and burning one spit's depth of the whole surface. To trap them slices of potato and carrot must be buried near the crop to be protected, and the slices examined daily. It is said that powder of linseed cake put about the crop to be protected checks the ravages of the wireworm.

PROTECTING TREE STEMS BY TAR (*A. B. C.*).—Stockholm tar is employed for the purpose. Gas tar would injure, if not destroy the trees. Apply the tar cold from the surface of the soil to such a height as the sheep cannot reach above. We should prefer tying pieces of wood round the stems so close together that the sheep could not get their noses between the pieces.

AMMONIA ADDED TO HARD WATER (*A Constant Reader*).—It is quite true that our direction to add "very little" is indefinite, but it is one of those cases in which precision is impossible without knowing the amount of salts per gallon rendering the water hard. However, a quarter of an ounce of carbonate of ammonia to two buckets (five gallons) of water will be enough under any circumstances, and would do no harm to the plants watered with it.

NAMES OF PLANTS (*M. G.*).—*Aubrietia purpurea*. You rightly describe it as "flowering for the last two months, and will continue in beauty for another six weeks." It is very pretty either in a mass or as an edging plant, and is very hardy. (*J. Ray*).—1. *Orobis vernus*. 2. *Doronicum Austriacum*. 3. A fungus, not detectable from such a specimen. (*G. M. J.*).—1. *Alliaria officinalis*. 2. *Barbarea vulgaris*. 3. *Carex riparia*?

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JUNE 3rd, 4th, and 5th. BATH AND WEST OF ENGLAND. Sec., Mr. John Kingsbury, 10, Hammet Street, Taunton. Entries close the 1st of May.

JUNE 26th. EXETER. Sec., T. W. Gray, Esq., Queen Street, Exeter.

JULY 8th, 9th, and 10th, 1857. LEAMINGTON. Sec., Thomas Grove.

JULY 9th. PRESCOT. Sec., J. F. Ollard.

JULY 28th, 29th, and 30th. SHEFFIELD, SOUTH YORKSHIRE, AND NORTH DERBYSHIRE. Sec., William Henry Dawson, Fig Tree Lane, Sheffield.

AUGUST 8th, 10th, 11th, and 12th. CRYSTAL PALACE. Sec., W. Houghton.

AUGUST 19. BRIDLINGTON. Sec., Mr. Thomas Cape.

SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.

SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Sec., Mr. H. Churchill, King's Head Hotel.

OCTOBER 1st and 2nd. WORCESTER.

NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.

DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.

JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.

JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.

N.B.—Secretaries will oblige us by sending early copies of their lists.

BIRMINGHAM POULTRY EXHIBITION.

"On revient toujours à ses premiers amours." True. We therefore hail the appearance of the Ninth Annual Prize-List of Bingley Hall, Birmingham. The whole place is familiar to the amateur—the crowing of the fourteen or fifteen hundred cocks—the noble and titled company—the great show of every breed of poultry—the very squeezing at the office-door—everything has its charms. It is looked forward to, and it was delightful last year to know that it was profitable.

The Society has peculiar claims on all who are interested in poultry, and we hope the support they will meet with this year and for many years to come will prove that amateurs are not unmindful of the obligations due to the Council of this Association. It is here that everything which has been adopted elsewhere has been tried, and in past years the first step of any new Committee was to ask advice from Birmingham. It was always fully and freely given. They formed the different classes, and whatever influence they have acquired has always been exerted for the benefit of the pursuit. While we press these claims on amateurs, we hope we shall not be thought exceeding our duties if we remind the trading classes of Birmingham and the railway companies that they are largely benefited by it, and that its claims on them are very strong.

PROTESTS AT POULTRY EXHIBITIONS.

A DOUBT cannot rest on the mind of any careful observer of matters connected with our Poultry Exhibitions otherwise than that the awards of those who officiate as Judges are far more closely scrutinised than they were at the time such meetings were first instituted some seven or eight years since.

At the onset there were but very few amateurs who possessed anything like an extended knowledge of beyond, perhaps, one or two varieties, to which their "fancy" or, perchance, something connected with their particular locality, had especially directed their individual attention. How different is the case at the present time! The peculiar characteristics—at least the most remarkable—are pretty generally well known to those who have visited many of our Poultry Meetings, in reference, at least, to all the leading classes, and any gross neglect in the arbitrations of acknowledged requirements in the successful pens at once draws down the well-deserved animadversions of the spectators. It cannot be denied, however, that not unfrequently rivalry and jealousy tend in no small degree to foster complaints against the decisions when there is really no just cause for so doing. Some men are proverbial as "bad losers," and even acknowledge a personal gratification, if they cannot win, in "bringing it to a wrangle."

Although a subject of regret that such a state of things should exist, as manifestly injurious alike to good fellowship, order, and even the permanency of such meetings, still it may be fairly presumed that the unsuccessful exhibitor will ever be most sensitively alive to the imperfections of his rivals, exultant in pointing out their defects, and equally indefatigable in eulogising the merits of the poultry he has long looked upon with feelings, perhaps, closely akin to considering that his own birds alone possess all the attributes of perfection. It is undoubtedly true that even the failings of poultry become less apparent by being brought frequently, perhaps daily, before the eye of an owner, who naturally regards them with an absolute indisposition to examine too closely into evident defects. How certain it is, also, that poultry "at home" as frequently appear far more worthy of commendation than when competing for public favours in the exhibition room. It is only by the closest contrast that the relative merits of different specimens can by possibility be estimated; so much so, that in large classes we have frequently known some of our most competent and practised Poultry Judges acknowledge their inability to arrive at a positive conclusion unless rival and distantly-located pens were temporarily placed in juxtaposition for their more minute investigation, being immediately afterwards restored to the place originally

assigned them. In all cases of "upper and lower tiers" of coops such disputed degrees of superiority must frequently occur, as a good and an indifferent light must ever affect general resemblance, more especially when it is recollected that Poultry Judges, from the extreme shortness of time allowed them, must in the majority of cases determine by "first appearances," and by such only, as the period for public admission cannot under any circumstances be delayed.

There may be individuals who will advance, "The arbitrators have the manifest advantage of taking any poultry out of the pens and examining them in the hand if they choose." Admittedly it is so, and not unfrequently, entirely from so doing, they arrive at the very *opposite* conclusions they would have done had they not taken advantage of such opportunity. "Handling," as it is termed, at once told that even their long-practised eye had been previously imposed upon, that failings existed which sight unaided could not detect by the most prying scrutiny, and, consequently, to "find fault with the decision" at length arrived at is confessedly the natural sequence of relying on eyesight alone. No doubt exists in our mind that not a few instances could readily be adduced where complaints originated exclusively from this very occurrence.

This brings us at once to the subject of "protests" against the awards of Poultry Judges, and whether Committees act advisedly in either encouraging them or allowing them. We ourselves do not recollect even a single instance where the entertaining such "protests" ENDED SATISFACTORILY. It would, indeed, be unnatural to suppose it would be so where arbitrators were first, after mature consideration, appointed, and afterwards any disputant could thus question their award. Quarrelsome debate must conclude with still farther severance of friendship and good feeling, for it is almost impossible, however desirous even the antagonists of opinion themselves may be to disabuse their minds of angry feeling, not eventually to relapse into the very sentiments they at the onset scrupulously disowned. A retrospect of the past will bring the truth of this statement somewhat forcibly to the recollection of most of our readers. Let, then, in all cases, the decisions of the Judges be final. If the officials have really and in truth given awards that are unjustifiable, "the press," that most powerful of all appliances to rectify real abuses of power or appointment, will undoubtedly correct the error already committed, and equally prevent its recurrence on future occasions. The final result of unseemly controversy during the time the show remains open to all who choose to visit it must be patent to every Committee who unhappily have been subjected to the annoyance. It actually ruins future prospects altogether, and consequently, if from prudence alone, ought by all available means to be avoided. But, like many other failings, even this objection, if advisedly treated, will undoubtedly very speedily effect its own cure. If any gentlemen acting as arbitrators have really given unjustifiable awards, Poultry Committees will effect the quickest remedy by not again engaging their services; if, on the contrary, these gentlemen are unjustly assailed, the false accusers will gain no enviable prominence in public estimation by urging impeachments they cannot sustain. All the angry recrimination consequent on such outbursts in the show will be avoided, and the popularity of the meeting will be unimpaired.

We offer these hints to the consideration of Poultry Committees, whose interests and comforts are alike enlisted, to establish on some settled basis one undeviating regulation that will permanently prohibit the recurrence of misunderstandings, which it is well known invariably, when once permitted to attain "full play," tend to both present acrimony and uproar equally with future pecuniary disadvantage.—QUIS.

CHARACTERISTICS OF SPANGLED POLANDS.

It seems to be almost universally admitted that Poland fowls should be without combs or wattles, and as bearded as possible; next that they should be as accurately spangled as can be, and that the tails should be clear, having a well-defined spangle at the end of each feather. At the same time beardless birds are admissible, and may compete with

success if they are superior to their opponents in other points. A question has been mooted which is likely to swell into importance, viz., How far is lacing tolerable in these birds? It seems that in judging these, if there were several pens approaching to perfection, and it was hard to distinguish between them, then if the prize is offered for Spangled Polands, Laced birds would lose the prize. It has been argued, and with some force, that when the prize is simply offered for Gold or Silver Polands, Laced birds are eligible; but we think if, as is mostly the case, Spangled birds are mentioned, then lacing should be a disqualification.

There has been great progress made in the Spangled Polands and Hamburgs, and we hope it will continue. Amateurs of the former must now try for well-laced top-knots without white feathers, well-spangled breasts, and well-marked hackles and saddles.

There is one point which calls for the greatest attention, and that is to avoid all crooked birds as breeding stock. We know at one of our great shows there was scarcely a pen, except in the Silvers, that had not a crooked bird in it.

A PLEA FOR HAMBURGHS.

IN THE COTTAGE GARDENER the last few weeks the Game and Poland fanciers have been writing in favour of their pets. Now, please allow a Hamburg fancier a small space in your columns. Why should they not have as high a standing in the opinion of the public as the pugnacious Game or dormant Polands? Some may say, who do not like them, they will not sit. What of that? It is easy to obtain a foster-mother, and I am sure they much more than make up for not sitting in the quantity of eggs they produce. Mr. Baily truly says, in his valuable little work, that Silver-pencilled Hamburg fowls produce as many eggs again as any other breed. I have a hen of that breed now in my possession which has laid ever since Christmas, and I think I may say with safety she has not missed laying two days following since that time.

No one will deny, I should think, that they are as profitable, if not more so, than any other breed, as they are but small eaters, and where there is space get a great proportion of their living themselves.

Another objection some bring forward is, they are so small, not worth eating. I deny this, but emphatically say they are worth eating. Who will say but that they would rather have a small, nice-flavoured fowl than a large, coarse-eating Cochin? I think no one, but that all would prefer the small, delicate one.

Again, some say, "You do not kill them." Some do not, and why? They have seldom been tried, and therefore people do not know what they are. You must know anything to appreciate it. Let any person who keeps Hamburg fowls, and has a couple of chickens not good enough for show or stock, kill them and eat them, and on the following day try a couple of good large Cochin chickens, and see which of the two dinners he enjoyed most. In my opinion the only thing Cochins are good for are for their eggs, and as mothers I think that they excel all others.

Whilst speaking of Hamburgs I think I may say that I prefer the Silver-pencilled Hamburgs, as I think they are more prolific of eggs and more beautiful. I also think they are better foragers, and therefore do not require so much feeding.

Now, as to the showing of Hamburgs, I think they labour under many disadvantages, that is to say, more than most fowls, for what is considered a mere trifle in some breeds would disqualify a Hamburg; for instance, in the Pencilled Hamburg the least spot on the hackle, or if at all a cloudy plumage. Nevertheless, is it right that the Judges should withhold prizes from them more than from other breeds? They surely do so, for I knew one or two instances last year and the year previous, at different Shows, where prizes were withheld from the Hamburg class, and not in any other; but of course that is left to the Judges as long as that rule is specified in the list of rules. But, after all, is it right that prizes should be withheld? They promise the first and second prizes to the best two pens in each class. Then after that let a bird be ever so true or good elsewhere,

if it has a single spot on the hackle the whole pen is disqualified.

But I am trespassing on your space, and therefore, after saying a few more words on this beautiful class of fowls, I must conclude. May I ask the questions, Why are not the Hamburgh fowls more generally kept? and why do not persons who do keep fowls keep one sort, unless they have the different breeds apart?

Let me also endeavour to impress upon the minds of some that it is as cheap and as little trouble to keep good fowls as mongrels. Of course, let each person choose the sort he likes best, or the sort which suits his locality. Cochins are best for a confined space; Hamburghs where there is plenty of room, and I say Game for a farmyard; but I cannot enumerate all the different breeds.—A HAMBURGH FANCIER.

RABBIT HUTCHES.

My hutches are double storied, four feet long, two feet wide, and five feet high, the entire structure resting on small iron castors, and being not unlike a chest of drawers in outline, with the top slightly sloping towards the front. The lower compartment is two feet from the ground, and the bottom is composed of narrow splints of deal two inches wide, rounded at the edges, with an interval between them of an eighth of an inch, to allow the urine to pass through. Beneath this bottom is a second, sloping from front to back, and composed of a single sheet of galvanised iron. By this means the urine readily runs off into a gutter placed at the back, and is conveyed from thence into a pail for removal.

The iron bottom rests on rafters, and is made to shift, for the purpose of being washed from time to time as necessity may require.

The upper story is simply a repeat of the lower one; but it is equally certain that no moisture can pass through into it.

Between the top and the roof or ceiling of the upper story is a receptacle for corn; the top, hung on hinges, forms the lid.

The entire front of the hutch is formed of frames of galvanised wirework, and impervious to mice.

These frames, suspended on hinges, serve as doors.

To prevent the wood from absorbing the moisture, the floor and sides are brushed over with boiled oil, containing a little umber, to which, when dry, is added a coat of varnish.

Nothing can be more satisfactory than a structure of this kind, affording the animals complete dryness and free ventilation, and easy of access for all purposes.

With regard to expense, less than 50s. will cover the outlay for such an one; and surely the well-doing of our valuable animals should be the first consideration, leaving "old barrels or tea-chests" to their admirers.—AMATEUR.

PIGEONS.

CLASS 4.—PIGEONS WITH WHIRLING FLIGHTS (*Columba in gyrum flectens*).

French.

German.

PIGEONS TOURNANS.

DER RING SCHLÄGER.

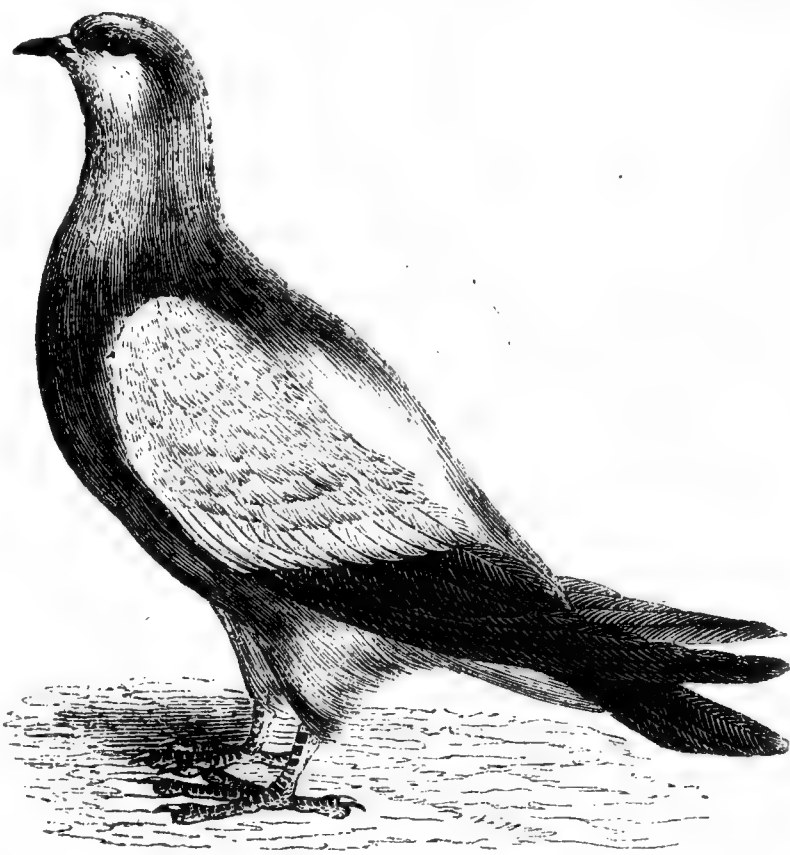
THE Pigeons which I place in this class are, I believe, now extinct in this country, and I have only seen one pair, which were at a Pigeon dealer's in Coblenz. They were common-looking birds, with small peaked crowns and red and white plumage. They were shown me by the name of *Ring Schläger Tauben*; their peculiar movements and circling flight were described to me, and they were represented as exceedingly productive. As they were closely confined I had no opportunity of witnessing their antics, but I noticed that the vanes were beaten off the ends of the flight feathers. I have not met with any description of them among the German writings on Pigeons.

MM. Boitard and Corbie, in their work "*Les Pigeons de Volière et de Colombier*," published at Paris, 1824, describe a variety of this class under the name of "Pigeons

Tournans" (*Columba gyrens*), which are rather stouter than a common Tumbler, the eyes black, with a narrow cere, and the feet shod. It would appear that these birds are rare, for they further say that for a long time the amateurs have renounced this bird on account of their flying in circles, even in the dovecot, as well as from their jealous character, which they think causes much derangement in the aviary.

The common *Tournant* is grey, with black spots on the wings (chequered?); also red or pearl white, with a white horseshoe mark on the back, and they frequently break some of the wing feathers with the violence of their movements. The engraving is from the French design.

Although I have never seen any of this class of Pigeons in England, and believe them at present extinct here, yet we have descriptions of them under the names of Smiter, Turner, and Finnikin, which may be regarded as three varieties or degrees of comparison.



The *Smiter* is in the positive case a strange-flying Pigeon. See Girtin, p. 107:—"This Pigeon in shape, make, and diversity of plumage, nearly resembles the Tumbler, the size excepted, it being a much larger bird. The *Smiter* is supposed to be the same species (variety?) that the Dutch call the *Drager*. When it flies it has a peculiar tremulous motion with its wings, and commonly rises in a circular manner, the male, for the generality, flying much higher than the female; and though it does not tumble it has a particular manner of falling and flapping its wings, with which it makes so loud a noise as to be heard at a great distance, which is frequently the cause of its shattering and breaking its quill feathers."

The *Turner* may be regarded as the comparative case, or intermediate variety, being a stranger-flying Pigeon, though, from Mr. Moore's description, it seems closely to resemble the *Smiter*:—"This Pigeon is like the *Finnikin*, except that when it is salacious and plays to the female it turns only one way, whereas the other turns both; it has no tuft on the back of the head, neither is it snake-headed."

The *Finnikin* then takes the position of the superlative case, or the Pigeon with the manner of flying, whirling, turning, undulating, and pouncing in the strangest possible style. Mr. Moore's description of the *Finnikin* is as follows:—"This Pigeon is in make and shape very like a common Runt, and much about the same size; the crown of the head is turned much after the manner of a snake's head; it is gravel-eyed, and has a tuft of feathers on the hinder part of the crown, which run down its neck not unlike a horse's mane. It is clean-footed and legged, and always black and blue pied. When it is salacious it rises over its hen and turns round three or four times, flapping its wings, then reverses and turns as many the other way."

"Were a gentleman in the country to stock a dovecot with this sort of Pigeon, their whimsical gestures might

engage the country people to imagine he kept an enchanted castle.

"Some people disapprove this sort of Pigeon as apt to vitiate their other strains, by making a hen squat by these antic gestures; but, in fact, they are no more dangerous that way than any other breed when salacious."

I think it is much to be regretted that a breed of Pigeons so remarkable for their odd movements and the peculiarity of "the tuft of feathers which run down the neck not unlike a horse's mane," which seem to mark them as a distinct variety, should be allowed to pass away and be numbered with the have been's.—B. P. BRENT, *Dallington, Sussex*.

P.S.—Can any correspondent or reader of THE COTTAGE GARDENER inform me if any of these Pigeons—Smiters, Turners, or Finn timers—are in existence, or procurable in this country?

COMBS OR NO COMBS—THAT IS THE QUESTION.

I MUST trespass on your columns for the purpose of replying to "C. E. C.," in whom I think I recognise our greatest Poland breeder. A comb in the Poland, according to him, is the greatest possible defect and imperfection. Now, every one must acknowledge that a natural state of things is preferable in all matters connected with live stock to an artificial. Assuming this to be correct, therefore, in Polands also it holds good. I am sure all will agree that naturally Polands had the shaped combs which excite the horror and wrath of "C. E. C." and your amiable correspondent "PERRUQUIER." May I be pardoned if I give a few of the benefits accruing from combs in Poland fowls? The combs support the crest, and prevent it falling over the eyes, and although this may be "an impudent malformation," still it does not give the blinded appearance some birds have.

The combless birds appear wretchedly uncomfortable, and, from the great crest falling over the eyes, cannot see to feed properly, nor, when pecked (which all other fowls do when they are kept with Polands) at their crests, can they defend themselves easily. Again, in the madness some people have to breed combless birds, they care not whether the birds are diseased or deformed.—THE COMB CHAMPION.

OUR LETTER BOX.

CHOICE OF GOLDEN-SPANGLED HAMBURGH COCKS.—"I have two cocks of the Golden-spangled Hamburgs, one black-breasted, with large comb, the other spangled-breasted, with comb rather smaller. Which would you advise me to exhibit at a Poultry Show?"—A SUBSCRIBER.

[As it is quite possible for a Spangled Hamburg cock to have too much comb, and as a black breast is a defect, we have no hesitation in advising you to exhibit the spangled-breasted bird. The whiteness of the deaf ear should weigh in your selection, as, however good the cock may be in other respects, he will not get a prize if his deaf ear is red.]

MIXTURE OF BLACK AND WHITE BANTAMS.—"My White Bantam cock is perfection; my Black Bantam hen ditto. If I mate them, will the chickens be speckled, or some black and some white? My object is to get black. I have no experience in Bantams."—W. H.

[The probable result of your cross will be pied or patchy birds. You will get none quite self-coloured. The two colours are in such decided opposition that we should not advise the cross. If you wish for Black birds, and have any friend who keeps them, and who would allow her to run for a day or two with his, send her there, or hire a cock for a month of some dealer. They are not expensive to buy.]

HATCHING CHICKENS.—GREEN FOOD FOR THEM.—"This season I was very particular with the hens I set, so much so, that I took a house for the purpose, the first floor above a weaver's shop. I have, however, been particularly unsuccessful, and have seldom got more than four or six chickens out of each sitting. It has been suggested that the shaking of the floor by the working of the looms might prevent the eggs from hatching. Will you or any of your correspondents advise me as to this, so that I may avoid such a loss of eggs again? I find a great difficulty in getting green food for my poultry just now. Can you put me upon a plan to procure the proper kind?"—L.

[It is impossible to say, in the absence of comparative experiments, whether agitation such as you mention would be injurious to incubation. Probably it would, for we know that hens select quiet and solid places for their nests. Besides, it is quite certain that on or near the ground, whence a gentle moisture may ascend to the eggs, is the situation of all others most favourable for a hatching nest. Mustard and Rape sown in boxes or elsewhere would speedily produce green and wholesome food

for your chickens. Mowings of grass chopped into very small pieces are also good for them.]

DISEASED RUNT.—CAPUCHIN PIGEON.—"I have a Runt that has the egg-bag touching the ground as she walks. She seems in good health, and is as lively as any of the rest. Is there any way of curing it? Could you tell me the characteristics of a good pair of Capuchins?"—H. M.

[Mr. Moore, in his "Columbarium," says of the disease called by the fancy "navel fallen," "There is a kind of bag hanging down near the vent. This malady is generally desperate, and if giving the pigeon clary (a kind of sage), or some other strengthening things, will not cure it, I know nothing that will." We do not know if this is the same complaint as that of "H. M.'s" pigeon. I once had a common hen pigeon similarly affected with protrusion of the egg-passage, and as I knew of no cure I killed her. I expect it arises from some internal rupture or weakness, perhaps owing to laying too frequently. Capuchins are simply imperfect Jacobins; that is to say, they are without the chain, and most likely are only a cross from that breed more or less remote. A neat hood, pearl eye, clean white head, tail, and flights are their chief characteristics.—B. P. B.]

CHARACTERISTICS OF A ROUEN DRAKE.—"I have three Mallards, one of which weighed at ten months old six pounds and a quarter, and the only fault I can see in him is the bill, which is blue, being marked with darker spots. The other two are less in size, but one has a green bill with black hook. My Ducks, I believe, are perfect. Which should I show with them, the blue-spotted or the green-bill Mallard?"—A CONSTANT SUBSCRIBER.

[Rouen Ducks should be exactly like Wild Ducks, only larger. The bill of the Drake should be of a greenish yellow. You must not show the bird with the blue-spotted bill.]

LONDON MARKETS.—MAY 11TH.

COVENT GARDEN.

Supply adequate to the demand, but not nearly to equal what we usually have at this season. Forced fruits comprise *Pines, Grapes, Strawberries, Peaches, and Cherries*, all of which may be had at last week's rates. Forced vegetables consist of *French Beans, frame Potatoes*, and a few *Tomatoes*, which are very useful at this time of year. From the Continent we have received during the week large consignments of *Asparagus*, young *Carrots*, *Beans*, *Green Peas*, and *Artichokes*, in excellent condition; and from Cornwall and the Scilly Islands *Asparagus*, *Broccoli*, *Round* and *Kidney Potatoes*, and a few early *Peas*.

FRUIT.

Apples, kitchen, per bush.	8s. .. 12s.
" dessert, do.	12s. .. 20s.
Pears, over	
Pine-apples, per lb.	8s. .. 12s.
Grapes, per lb.	10s. .. 20s.
Peaches, per doz.	0s. .. 0s.
Nectarines, do.	0s. .. 0s.
Strawberries, per oz.	6d. .. 1s.
" Foreign, none	
Melons, Foreign, none	
" English, do.	
Morello Cherries, per lb.	0s. .. 0s.
Oranges, per 100	4s. .. 12s.
" Tangerine, none	
" Seville, do.	6s. .. 12s.
Lemons	6s. .. 10s.
Almonds, per lb.	2s. 6d. .. 4s.
Nuts, Filberts, none	
" Cobs, per lb.	1s. 6d. .. 0s.
" Barcelona, per bushel.	20s. to 24s.
Nuts, Brazil, ditto.	14s. .. 16s.
Walnuts, per 1000 ..	10s. .. 15s.
Chestnuts, per bushel	16s. .. 24s.

Beet, per doz.	1s. to 6s. 1d.
Potatoes, per cwt. ..	7s. to 10s.
Onions, Y'ng per b'nch	4d. .. 6d.
" Old, per bush.	3s. .. 4s. 6d.
Turnips, per bunch.	3d. .. 4d.
Leeks, per bunch	2d. .. 3d.
Garlic, per lb.	6d. .. 8d.
Horseradish, per bundle	2s. .. 4s.
Shallots, per lb.	6d. .. 8d.
Lettuce, Cos, each, French	6d. .. 1s.
" Cabbage, do. do.	— .. 1½d.
Endive, do. do.	— .. 4d.
Celery, per bunch.	9d. to 1s. 6d.
Radishes, Turnip, per dozen bunches	— .. 4s.
Ditto, long, per hund.	— .. 6d.
Water Cresses, per doz.	9d. to 1s.
Small Salad, per punnet.	2d. .. 3d.
Artichokes, per lb.	— .. 2d.
Asparagus, per bundle	4s. .. 8s.
Sea-kale, per punnet.	1s. .. 2s.
Rhubarb, per bundle	2d. .. 4d.
Cucumbers, each.	9d. to 1s. 6d.
Mushrooms, per pottle	1s. .. 2s.

VEGETABLES.

Cabbages, each	9d. to 1s. 6d.
" Red, each	3d. to 6d.
Cauliflowers, each.	6d. .. 1s.
Broccoli, per bdle.	1s. 3d. to 1s. 9d.
Greens, per doz. bnch.	2s. .. 4s.
Spinach, per sieve ..	— .. 4s.
French Beans, per hd.	1s. .. 2s.
Carrots, per bunch ..	5d. to 7d.
Parasips, per doz.	9d. .. 1s.

HERBS.

Basil, per bunch	4d. to 6d.
Marjoram, per bunch	4d. .. 6d.
Fennel, per bunch ..	2d. .. 3d.
Savory, per bunch ..	2d. .. 3d.
Thyme, per bunch ..	2d. .. 3d.
Parsley, per bunch ..	2d. .. 3d.
Mint, per bunch	2d. .. 4d.
Green Mint	6d. .. 8d.


POULTRY.

Young poultry is slowly coming in. Trade is dull, especially for goods of inferior quality.

Large fowls.	7s. 0d. to 8s. 0d. each.
Smaller do.	5s. to 6s. 0d. ..
Chickens ..	3s. 0d. to 4s. 6d. ..
Goslings.	6s. to 6s. 6d. ..
Ducklings.	4s. 0d. to 4s. 6d. ..
Plovers' Eggs in bulk.	1s. 9d. to 2s. 6d. per dozen.
Guinea Fowls	4s. 0d. to 4s. 6d. each.
Pigeons	9d. to 10d. ..
Rabbits.	1s. 4d. to 1s. 5d. ..
Wild ditto.	10d. to 11d. ..
Leverets.	3s. 0d. to 4s. 6d. ..

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—May 12, 1857.

WEEKLY CALENDAR.

D M	D W	MAY 19—25, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
19	TU	Field Madder (Sherardia).	29.996—29.702	70—30	S.W.	—	4 a. 4	48 a. 7	2 13	25	3 48	139
20	W	Woodroof (Asperula odora).	30.058—30.019	71—30	..	—	3	50	2 26	26	3 45	140
21	TH	ASCENSION. HOLY THURS.	29.937—29.746	73—50	S.	24	2	51	2 40	27	3 41	141
22	F	Mugwort (Galium).	29.634—29.586	64—36	S.W.	16	1	52	2 57	28	3 37	142
23	S	Goosegrass (G. aparine).	29.576—29.482	66—42	S.	04	III	54	sets		3 32	143
24	SUN	SUN. AF. ASC. Q. VICT. B. 1819	29.549—29.475	63—42	S.W.	01	58	55	9 a. 59	1	3 27	144
25	M	PRIN. HELENA B. 1846.	29.807—29.491	64—44	S.W.	14	57	56	11 6	2	3 22	145

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 66.0°, and 44.4°, respectively. The greatest heat, 89°, occurred on the 23rd, in 1847; and the lowest cold, 30°, on the 24th, in 1854. During the period 113 days were fine, and on 83 rain fell.

USEFUL GARDEN GRASSES.
AVE'NA FLAVE'SCENS.
(YELLOWISH OAT GRASS—GOLDEN OAT.)



WE have not described and depicted all the Grasses sufficiently ornamental to deserve a place in garden borders, but until we have cultivated and ascertained with certainty the names and characteristics of others sent to us as ornamental we must refrain from publishing them. We shall have acquired this knowledge, we hope, in the course of the present summer. In the meantime we will proceed to give portraits and descriptions of the Grasses which should be sown for

forming the best lawns and bowling greens, to be kept short only by mowing and rolling.

Before proceeding to do so we will publish a table, borrowed from Messrs. Peter Lawson and Son's *Agrostographia*, of the Grasses, and the quantities recommended by them to be employed in forming such turf on soils varying from light to heavy.

Names of Grasses.	Light soil.	Medium soil.	Heavy soil.
	lbs.	lbs.	lbs.
<i>Avena flavescens</i> (Yellowish Oat Grass)	1	1	—
<i>Cynosurus cristatus</i> (Crested Dog's Tail)	8	9	10
<i>Festuca duriuscula</i> (Hard Fescue)	3	4	5
<i>Festuca ovina tenuifolia</i> (Fine - leaved Sheep's Fescus)	2	2	1
<i>Lolium perenne tenue</i> (Fine-leaved Rye Grass)	20	22	24
<i>Poa nemoralis</i> (Wood Meadow Grass)	2	2	2
<i>Poa nemoralis sempervirens</i> (Hudson's Bay Meadow Grass)	4	4	4
<i>Trifolium repens</i> (White Clover)	7	7	7
<i>Trifolium minus</i> (Trefoil)...	2	2	1

“If the ground is much shaded by trees, 2 lbs. of *Poa nemoralis sempervirens* and 2 lbs. of *Poa nemoralis* should be substituted for the *Festuca tenuifolia* and *Avena flavescens*. In walks, bowling greens, &c., wished to be kept as dry as possible, especially towards the end of the season, *Trifolium repens* should be sparingly introduced, and an equal weight of *Cynosurus cristatus* and *Festuca duriuscula* be substituted for it. When it is intended to mow the grass by a machine, instead of by the common scythe, greater proportions of *Festuca duriuscula* and *F. ovina tenuifolia* may be sown.”

Avena flavescens is a perennial. *Roots* creeping. *Stems* a foot high, rather slender, leafy, smooth, with several, sometimes hairy, purplish joints. *Leaves* yellowish green, narrow, flat, tapering, pointed, hairy on both sides, rough-edged, many-ribbed. *Leaf-sheaths* ribbed, having numerous bent-down hairs. *Stipules* short, jagged, fringed. *Flower-head* a panicle, three inches long, rather close, much-branched, half-whorled, spreading, erect, but sometimes rather drooping, becoming compact and erect when the seed is ripening, formed of

very many small, yellowish, shining spikelets. *Florets* usually three, but sometimes four, longer than the calyx; stalks bristly. *Calyx-valves* membranous, pointed, very unequal; the larger has three ribs. *Corolla* with outer valve three or five-ribbed; inner valve notched, turning in at the edges. *Awn* issuing from above the middle of the outer valve, and nearly twice as long as the corolla. *Germen* reversed egg-shaped. *Nectary* two small scales, jagged at top, as long as the germ. *Styles* short, distinct, erect. *Stigmas* densely feathery, compound.

It belongs to Triandria Digynia of the Linnæan System. It flowers early in July, and ripens its seed about the third week of August.

It is one of the Grasses which do not thrive when cultivated alone, never succeeding or enduring so well as when grown associated with other Grasses.

A dry, calcareous soil is its favourite locality, but it is found in all kinds of soil, and is always a part of the herbage of the richest pastures. Mr. Sinclair says its seeds vegetate freely if sown in the autumn, or not too early in the spring. He sowed them in almost every one of the months, and concluded that the third week of May and any time in August are the best periods for sowing it.

It is a native of England, but the first botanist to notice it was Ray. He calls it *Gramen avenaceum pratense elatius, panicula flavescente, locustis parvis* (Taller Meadow Oat Grass, with yellow panicle and small spikelets).

INSECTS ON OUR FRUIT TREES.

ALL know full well that the first beams of a returning spring are the signal for the return to an active state of being in myriads of insects which had lain in a state of comparative torpidity since the previous November. As might be fairly anticipated, most of them awaken or receive their change with very hungry stomachs; and so severe are the latter in some cases, that fruit trees are occasionally stripped of their foliage in a few days. The destruction of insect foes is a point in gardening which may never be set aside. No infallible preventive has hitherto appeared to supersede the necessity of annual dressing, picking, and other means commonly resorted to by the gardener. As for passing them by unheeded, and thinking it not very material to disturb or to destroy them, we may rest assured that as cause must produce effect, so a corresponding result must be looked for in the loss of fruit, deterioration in its character, or a lasting injury to the system of the tree.

Although I have nothing particularly new to offer, I may, I think, with a returning spring, run through the list of our common enemies, offering a few remarks in passing: some of our small gardeners may, perhaps, bear to be reminded of their insidious ways, and how to get at them.

The *American Blight* may be first pointed to as requiring attention when the trees are in the rest condition. It is now very generally known that, notwithstanding the numerous recipes heretofore given to the world, not one, as far as I am aware, has proved thoroughly efficacious. I am using the usual soft-soap mixture, with clay, and adding nearly a pound of glue dissolved in hot water to the mixture, and this with the idea of attempting to block them up in their dens; but I am assured by some persons that stable urine alone will destroy them: for this I cannot myself vouch. One thing is certain—that plenty of scrubbing with these

applications is of eminent service, and that when trees of any age become much infested, and their stems full of warty excrescences, it is best to cut them down at once and burn their remains.

Dressings should be applied, in my opinion, at twice—in November, and again at the end of February.

The next in order I may name is the *Red Bar Moth*, the caterpillars of which commit such ravages amongst our Apricots. This insect deposits its eggs on the branches, and they can scarcely be seen through the winter. Towards February or March, however, they begin to assume larger proportions, and may be found, by a close examination, adhering to the bark like patches of paste, oval, about a quarter of an inch in diameter the long way. These are covered with little dots, perhaps nearly thirty on each, and I take it for granted that each of these produces a caterpillar. There is no better way than to hunt these out and to crush them.

The *scaly insect* may be found on Pears, Apples, Peaches, and, indeed, other fruits. This adheres to the principal stems in myriads, sometimes covering the bark entirely. Soft-soap water applied at two or three dressings by the syringe, at the rate of about four ounces to the gallon, is a good remedy. This must be battered into all crevices—made to search every portion of the tree. I, however, think that the glue mixture I have before recommended will prove superior. Brushing is to be recommended in all these cases.

We come next to the various *Aphides*, or Plant Lice, whose name is indeed Legion. There is scarcely one of our fruits but is liable to the attacks of these locust-like foes, which sometimes invest the whole surface of every leaf on the tree. The whole gardening world flies to tobacco in the present state of things, and it is certainly equal to the complete destruction of all aphides that have come under my notice. But tobacco is expensive, and it becomes us all so to scheme as to prevent the necessity for any excess in the use of it. This consists in attacking the enemy the moment he sets foot on the tree. Thus with Peaches and Nectarines I have for years advised the readers of THE COTTAGE GARDENER to apply it the moment the first fly appears. So with the Cherries: the fly generally attacks the points first. These may be dipped in a bowl of tobacco water—six ounces of shag tobacco to a gallon of water. If, however, the whole tree is infested, the application must be general likewise, either fumigating or syringing. The remarks here offered apply to every kind of fruit tree infested with this insect. Of course the mode of application must be modified by circumstances.

We come next to the *Red Spider*, the dread of the Vine and Melon grower, to say nothing for the present about our plant cultivators, and, indeed, all who have to do with general gardening. This pest in former days committed enormous havoc in our hothouses, when it was the fashion to fire away by day and night, until the atmosphere of hothouses resembled a harmattan. This was the very element for these little scarlet-coated vagabonds; indeed, one thoroughly acquainted with their natural habits and inclinations, and equally so with the character, culture, and habits of our plants and fruits under culture, might have supposed that the culture of plants, fruits, &c., was a secondary object in those days; that of having a good "cover for game," with good breeding conditions, as paramount objects. Sulphur here is the continual resort of all who get into a mess with these pests, and, as almost everybody is familiar now with this affair, I need say little more than that it consists in dredging flowers of sulphur over every portion infested, causing a fine and well-divided powder to cover every part.* But I would here allude more particu-

* We have now tried the *Boite à houppé* mentioned at page 35, and we testify that it is a most efficacious implement for diffusing the sulphur in a fine cloud over plants.—ED. C. G.

larly to the preventive system: a due attention to this will save much trouble and loss. Such consists in good maxims of culture, in cleanliness, in sustaining a healthy root action, and, above all, in taking care that the subject suffer not from drought at the root. With regard to the open air, a very frequent use of the syringe or engine, and in-doors by abundance of evaporation of moisture and a free circulation of air.

I may here refer to a *fly on Peach trees* that made its appearance occasionally in the month of September. This is a somewhat novel affair, and when once it commences generally smothers the whole tree, so that scarcely an inch of the foliage can be fairly seen. We received a visitation from it last autumn, and also in the one previous, and found it exceedingly difficult to extirpate. Tobacco water is, I suppose, as usual, the only remedy, for it appears it is of the aphid family.

These insects do immense damage at this period by sucking up the sap which should go towards the perfecting of the buds for the ensuing year.

Before leaving this chapter on the ailments of fruit trees during summer I may just advert to those pernicious *fungi* which do so much mischief to many of our fruit trees. Their attacks assume the character of a rust or a burnt appearance, and, indeed, by many practical men it is termed "rust." There is no doubt that most of these appearances are produced by parasitical fungi, which in the main live on the elaborated sap—that very material which it has taken weeks for the plant to prepare, and which is of such eminent service in the feeding and maturation of both fruits and the future blossoms. Such rusts generally commence during dry weather in June or July, and frequently spread over the whole tree by the middle of August. I am not aware of any remedial measure except sulphur, alike the enemy of the red spider and of many of the fungi. Preventive measures are best. It will be found that drought at the root is the most fertile source of the evil. Fruit trees planted in warm and light soils are ever the most liable to it; those in materials of sound texture the least.

R. ERRINGTON.

VISITS TO NURSERIES.

PINE APPLE PLACE, EDGWARE ROAD, LONDON,
MESSRS. ARTHUR HENDERSON & CO.

(Continued from page 50.)

THE newest thing in this nursery is from an original idea—a rare thing in gardening—a thirty-paned propagating house, forty feet by thirty-five feet, which will be in three divisions, the tanks for bottom heat being the novelty. They are to be eighteen inches deep, with two flow and one return-pipe in each, and will be heated with Mr. Thomson's new retort boiler by the Messrs. Gray and Ormson. The new idea for bottom heat is as much improvement on all other modes of hot-water bottom heating as the new rule for allowing practical gardeners to become F.H.S. on the same footing as their employers. It is this:—After the three pipes are proved in each tank, that tank is to be filled on the principle of the filter, first with big stones in the bottom, or say as large as ducks' eggs, then another layer of stones not so big, after that a layer of very rough gravel, and another layer of gravel not so rough, and so on till the top is of the finest sand; then a foot of water is let in, and the pipes will heat the mass to 80°, more or less; and, when once that heat is got, a few hours' firing daily will keep it up, and a constant moist bottom heat is as certain as from a dung bed. Three inches of clean sand will keep down the vapour, and be the best way of bottom heating and plunging, and in the autumn the water will be withdrawn by turning a cock, and then a dry bottom heat

is secured for the winter, the mass of stones and gravel retaining the heat for days and days at little cost. This is a vast improvement on the old way of throwing in steam among stones for bottom or for more permanent heat, as was practised just at the time when the hot-water system was introduced.

The stock of stove and greenhouse plants, Orchids, and Ferns is very much larger than I have ever seen here, and the health, cleanliness, and training are in the first style of plant growing. The whole of the ground is now nearly covered with glass, and there are from thirty to forty more hands employed than during the last reign. The Orchids are removed to another house, which is crammed full of healthy, sizeable plants for sale. As in the Clapton Nursery, the enormous quantities of Heaths, Azaleas, and greenhouse plants show the extent of the country trade with this nursery, and they have an excellent way of making selections from all the tribes in their different catalogues, so that one can always pick out the best plants with little trouble.

There is a sick club among the men, to which each of them pays only one penny every pay night, and for which he is insured 10s. a week if he falls sick. At that rate above £20 were distributed since last November. This is a most excellent scheme where many hands are employed by one firm.

Mr. Fancourt, the father of British propagators, and the best of that profession in Europe, looks better than he did twenty years since. This is the third, if not the fourth reign under which he has been prime minister; but who can count the number of heads he cut off even under one reign?

Hanging baskets were first introduced here I believe, and now they find it a regular branch of business. All the *Æschynanthus* they grow that way now; also *Thyr-sacanthus rutilans*; *Hoya bella*; *Cactus* or *Epiphyllum truncatum Russellianum*, and the crosses from them; *Russellia juncea*, which blooms in these baskets, or basket-like pans with holes in the sides and bottom, better than in pots. *Campanula Garganica* they force in the stove in these baskets, where it rambles like a climber, and when it comes into bloom it is removed to a cool house, where you would hardly know it; and so with ten times more kinds than I can find room for, down to Aaron's Beard, the *Saxifraga sarmentosa*.

Jasminum dianthifolium, with a slender habit and sweet starry white flowers, was quite new to me as a stove plant, which everybody buys for its manageable size and most deliciously sweet blossoms. *Dipladenia urophylla* and *Allamanda Aubletii* are spoken of as very superior; *Ardisia hymenandra* and *Æschynanthus splendens* the same; *Ixora floribunda*, a close grower, with rosy flowers, ditto; *Rogeria thyrsiflora*, much after *Ixora*, the same; *Tecoma spectabilis*, *Meyenia erecta*, and the magnificent *Medinilla*, with *Maranta Warscewiczii*, the *Hexacentris*, *Gesnera Doncklarii*, *Dipladenia acuminata*, *Nepenthes phyllamphora*, the two *Sonerila margaritacea*, and *Impatiens Jerdonia*, are all of the first water.

The best six stove plants for hanging baskets, their own selection, are *Æschynanthus splendens*, *Hoya bella*, *Impatiens repens*, *Isolepis gracilis* (also in the greenhouse and out of doors in summer), *Margravia dubia*, with uncommonly fine foliage, and *Torenia Asiatica*.

The best twelve stove climbers, *Allamanda Aubletii*, yellow; *Clerodendrum splendens* and *speciosissimum* (two or three kinds of *splendens* are not worth growing); *Combretum purpureum*; *Dipladenia acuminata*, *crassinoda*, and *splendens*; *Hexacentris Mysorensis*, *Hoya imperialis*, *Ipomœa Horsfalliæ*, *Passiflora princeps* or *racemosa*, *P. Decaisnea*, and *Stephanotis floribunda*.

In the same way they go on to give selections of the best twelve variegated plants, the best twelve winter-flowering stove plants, the best thirty-six stove and

greenhouse Ferns, twelve of the most handsome Selaginellas and Lycopods, twenty-four Ferns and Selaginellas most suitable for Wardian cases, and twenty-four of the best hardy Ferns. The same with selections for the greenhouse, and a most particularly useful selection of hardy evergreens, flowering shrubs, &c., beginning with *Abelia floribunda* and ending with *Yucca recurva*.

Instead of following up or down such lists in so large a nursery I must turn your attention more particularly to the flower-garden plants. The very first plant I set my eye on in the show-house was a bedding plant new to me. It is as old as the Monument, but I never saw it, or even heard its name—a lovely blue *Anemone*, a native of Britain, and called *Apennina*. I have a picture of it now before me, and it is “all right,” but you must send for it before it is out of blossom. It is like a single blue *Hepatica*, and as hardy, but grows ten times faster, and one can soon have a stock of it by planting it out in rich, sandy soil; but it would grow in front of a Rhododendron bed, like the Wood Anemone, double and single, but it shows the bloom better than they do. It is a stand-up flower, like the yellow British Wood Anemone, *ranunculoides*, a very scarce plant—one of our wants at the Experimental.

Keeping to spring flowers, they had two beds of the very finest and newest Tulip for beds, quite dwarf, and one of the largest flowers you ever saw on a Tulip; it is all one colour, the most intense shade of crimson; it was in full bloom in the middle of April, and the name is *Vermilion Brilliant*. A second is a little taller, a clear yellow, and called *Canary-bird*; and a third, a light rose, is called *Proserpine*. The three will be cheap enough for all comers next October, and better kinds were never bedded.

In a row of boxes for window-sills I saw a very nice *Iberis*, called *compacta*, which ought to be in every spring garden for a bed or edging, being the most bedding-like of that family; behind it in the box was a row of the double yellow Wallflower. I recommended *Doronicum Austriacum* for the same boxes next year, to be put at the back of Polyanthus, or to be backed by the double dark Wallflower, and edged with the *Sir Walter Scott* Crocus. My own box that way was very gay this spring.

D. BEATON.

(To be continued.)

PLANTS FOR A COOL GREENHOUSE.

I HAD not forgotten the promise made to “J. R.,” but in the multiplicity of matters demanding attention I imagined that already he would have found his queries answered in replies to others. It is not many weeks since that a list of plants was given that might be raised from seed and cultivated in a cool greenhouse, and when prominence is given to such replies it is for the purpose of suiting readers similarly situated.

It is not so much the low temperature of which our correspondent speaks—the house frequently being down as low as 34° in winter—that will constitute his chief difficulty in cultivating the collection he wishes, for all of them would stand such a temperature for short periods uninjured; but it is the skill and attention necessary to prevent sudden extremes, and the necessity, if such low temperature is frequent, or at all continuous, to prevent the plants growing much during that period, that will constitute his chief barriers to success. If he merely wishes to *preserve* for display in spring and summer, and will master an article lately by Mr. Beaton on *keeping* plants over the winter irrespectively of the appearance they present at that time, then, if the house is often at 34°, he may succeed with nearly all he has named, if he causes the plants to rest even in fine weather, by giving them then plenty of air, and no more water than will

keep them from being dried injuriously. The exceptions would be chiefly the *Chorozemas*, *Boronias*, *Hoveas*, and *Zichyas*, and for these the temperature should seldom for any length of time be below 40°, as, if long below that degree, and the soil is at all moist, the roots will be apt to be too much chilled by radiation and evaporation combined.

I should have come at once to the conclusion that this *keeping* was the chief object of our correspondent, had he not praised so much the *Orobis vernus*, and expressed his desire to have more of that kind of growth. As this is a beautiful hardy herbaceous plant that flowers freely in March and April, if it was desirable to have companions to it in bloom while the greenhouse plants were just arousing from their winter's rest, then it would be necessary to have plants in pots equally hardy, such as the following:—*Anemone hortensis*, *nemorosa flore pleno*, *pulsatilla*, &c.; *Alyssum saxatile*; *Arabis verna* and *flaccida*; *Auricula*; *Corydalis solida* and *cava*; *Dielytra spectabilis*; *Draba aizoides*; *Doronicum pardalianches*, *plantagineum*, &c.; *Erythronium dens-canis*; *Fritillaria imperialis* and *variegata*; *Hyacinths* of sorts; *Iberis sempervirens*; *Holosteum umbellatum*; *Orobis cyaneus*; *Polyanthus*; *Primula*; *Narcissus*; *Ranunculus ficaria*, double, &c.; *Ribes sanguineum*, &c.; *Saxifraga crassifolia*, &c.; *Scilla bifolia* and *Sibirica*; *Tussilago farfara* and *hybrida*; *Ulex Europæus flore pleno*; *Wallflowers*, single and double; *Violets*, &c.

I mention these because such things are not despicable in small, cool, town greenhouses, where there is little else in bloom, and will now proceed, firstly, to notice the seedlings of our correspondent; secondly, allude to the plants which he wishes to have; and, thirdly, mention a few suitable for such a cool house which he has not alluded to.

The first thing that suggests itself respecting the seedlings is, that if they have passed through the last winter unscathed, and are now healthy, there seems no reason why they should not continue to do well; nay, more, if some of them continue to thrive, then I see no reason why such plants as *Hovea* may not also succeed even contrary to our expectations, as the temperature cannot have been so very low.

1st. *Dolichos lignosus* is a strong evergreen climber, that remains evergreen in a warmish greenhouse, but will be nearly deciduous in one often as low as 34°. When it gets a yard or so in length it should be planted out or put in a largish pot against a pillar, and so as to reach a rafter or arch of the roof. It will produce wreaths and sheaves of purple flowers in May when old enough. As soon as they fade cut them clean away, thin out the old pieces, spurs, &c., give encouragement to the young shoots, syringe them unmercifully with water several times a week in July, August, and the first part of September, give less syringing after that, and curtail water at the roots, that the wood may be ripened and fit to stand the cold in winter. Fibry loam will grow it well, with a little peat at the commencement. About the middle of March set it agoing with warmed water at the roots, and give less air.

The *Tacsonia mollissima*, from South America, I believe is much more tender. You will do little good with it if you plant it in front of the house near the glass, as there it would be almost sure to be pinched by the cold. You had better, when it is from one to two yards long, and trained to a single stem, plant it in a large pot, and train it up the back wall of the house, and then down the rafter. Give little water after September, that the shoot may be ripened. Move the shoot in November from the rafter, and place it along the back wall for warmth. Next spring pick out all the buds from the stem as far as the top of the wall, and leave only one about every fifteen inches on that part of the stem which runs along the rafter near the glass. From these long

dangling shoots will come, and you must let them dangle; probably they will not show flower that year. Curtail water again in autumn, cut back these shoots to a foot or so, and bring the main stem to the back wall again. Next spring thin out these spurs to one or two prominent buds, and they may give you shoots a yard or two in length in summer, with plenty of flowers near their points. Thus treated year after year, success will be certain; placed near the front glass in such a house, or kept growing by watering late in autumn, and success will be unlikely, from cold in the one case, and unripened wood in the other, which, though it may furnish you with plenty of shoots the following year, will most likely be destitute of bloom.

Your *Acacia* with the pinnated foliage is most likely one of the *lophantha*, *decurrens*, or *julibrissin* species, and will succeed admirably in such a house, and so will *pulchella*, *armata*, *juniperina*, *taxifolia*, *grandis*, and the whole lot of greenhouse *Acacias*. The foliage of many of the pinnated kinds is exceedingly beautiful, and their sleep, by shutting and twisting up the back of their foliage, not only at night, but also in dull weather, is very interesting. They are easily managed, growing freely in loam, with a little peat at first, requiring but little water when the temperature is low, but abundance at the roots and plenty over the foliage in an evening in summer.

The *Incarvillea Sinensis* I am unacquainted with, unless it be a synonyme for *Bignonia Chinensis*, which again is a synonyme for *Bignonia grandiflora*, and that again for *Tecoma grandiflora*, a fine climber from China and Japan, which would thrive admirably in the coldest part of such a house, as it has stood against a wall with slight protection near London.

The *Mandevilla suaveolens* will succeed if the roots are kept moderately dry in winter, and the wood is well ripened in autumn. I have some time ago mentioned the mode of treating this plant at Stockwood. It is planted at one end of the house, trained as one main stem along the house about eighteen inches from the glass, the main stem being studded with largish spurs, looking like thick-set spurs on a Pear branch against a wall; these are cut back and thinned in spring, and the result is a huge, long garland of white flowers. Syringe well when the flowers are gone, and keep down red spider.

The *Clianthus puniceus* will just be at home in such a house if kept moderately dry in winter when the temperature is low, and abundance of air given in sunny days to prevent excitement into growth. As the sun gains power it will want more water, and the house may be kept warmer by sun heat. Before and after blooming it will want a free use of the syringe, as the red spider otherwise will be sure to attack it. It will be better out of doors in summer than in any house. Loam and peat will suit it well.

Erythrina Caffra may be treated somewhat similarly. I have grown its neighbours, *cristagalli* and *laurifolia*, in such a cool house, much the same as I would a Willow stool out of doors. When the shoots had finished blooming they were inured to the open air and full sunlight by degrees; in the end of autumn the shoots were cut down close to the stool, and the pots kept cool and dry, just free from frost; in spring, when the shoots began to push, a little water at first, and more by degrees, was given, and the plant placed in a good position, any extra number of shoots being thinned out to give extra strength and room to those left. When growing freely abundance of water is necessary, and a frequent sprinkle over the foliage in an afternoon.

The *Anagallis Phillipsii* is one of the best of the Pimpernels, or Shepherd's Weather-glasses, a small herbaceous plant, brilliant with blue flowers when the sun shines. It is easily managed, and should be propa-

gated by cuttings every year, as young plants do best. It looks best when hanging from the sides of a vase or basket. You will thus perceive that, with the exception of the *Acacias*, *Clianthus*, and *Erythrina*, most of your seedlings will be best grown on pillars or along the roof of your house.

2nd. Keeping in view what has been said of *Chorozema*, *Boronia*, *Hovea*, and *Zichya*, and referring to previous volumes for full accounts of management, I would just premise here that it would be as well if even the others following should not be for long periods much below 40°, as, if they are, just so much more care will be requisite to keep the plants in a state of comparative rest. The following are the hardiest of the hard-wooded plants you mention:—

Chorozema angustifolia, *ilicifolia*, and *ovata*; *Polygala cordifolia*, *latifolia*, and *oppositifolia*; *Pimelea decussata*, *Hendersoni*, and *hispida*; *Boronia pinnata*, *triphylla*, and *latifolia*; *Pultenaea stricta*, *aristata*, and *oxalidifolia*; *Correa speciosa*, *pulchella*, and *rufa*; *Hovea ilicifolia*, *latifolia*, and *rosmarinifolia*; *Kennedya prostrata*, *Marryattæ*, and *ovata*; *Zichya coccinea*, *inophylla*, and *tricolor*; *Diosma virgata*, *cupressina*, and *ericæfolia*; *Eutaxia myrtifolia*, *pungens*, and *Baxteri*.

All these will require a compost of heath soil and fibry loam, the former to predominate when the plants are young; plenty of water when growing and flowering; the soil to be rough and open, and drainage perfect; all the dead flowers removed as soon as flowering is over; pruning according to the variety to take place then; wood to be grown in summer, hardened in autumn, and rested comparatively in winter, by plenty of air when possible, and little water then. As the sun gains power more will be wanted.

Of the others *Olea fragrans* is the sweetest, and *latifolia* and *buxifolia* may be added if deemed desirable, and, though requiring similar soil to the above, will not need so much attention.

Chironia linoides, *floribunda*, and *angustifolia* are almost as much herbaceous as shrubby, require more loam than peat, and should be cut back freely when done flowering. Some should be propagated every year, as plants rising two years old bloom and look best. The *Linum trigynum* may be treated somewhat similarly, freely cut down after flowering, and receiving but little water in winter.

Clematis cærulea, *Sieboldii*, and *odorata* will just be at home in such a house, growing in a large pot trained to some sort of trellis, and removed to the open air in July, and housed in the end of October.

Jasminum gracile, *grandiflorum*, and *odoratissimum* may receive similar treatment, but be housed by the middle of October.

Habrothamnus fascicularis will do best against a pillar, but it is not so good in our opinion as *elegans*. Having already exceeded our space, I can

3rdly, merely mention a few others that will do well in such a house. Azaleas, the best kinds, to bloom from April to the middle of June; Camellias, which will commence blooming in March; Bossiæa of many kinds; Callistachys retusa; Coronilla glauca; Cytisus Attleana and proliferus; Crotalaria latifolia; Daviesia acicularis; Grevillea rosmarinifolia; Indigofera australis, &c.; Metrosideros lanceolatus; Myoporum parvifolium, &c.; Passiflora cærulea, racemosa cærulea; Pittosporum tobira and undulatum; Proteas of sorts; Sparmania Africana; Sutherlandia frutescens, &c.

Then the whole tribe of Fuchsias would just be at home, and so would small plants of Calceolarias, Cinerarias, and Pelargoniums, if care be taken in watering; and in such a house scarlet Geraniums and a whole host of things for bedding would be kept as safe, and often do much better afterwards, than if they had received more heat in winter. The great thing is to give air in

such circumstances on every practicable opportunity, and avoid the indiscriminate pouring from the water-can, as well as spilling the water carelessly on the floor and stages. If our correspondent has had little experience he had better begin with those indicated above, and otherwise described as the hardiest, and get on with the finer hard-wooded plants as his practice becomes more enlarged.

R. FISH.

PELARGONIUMS OR GERANIUMS.

(Continued from page 92.)

FANCY GERANIUMS.

SIX NEW SELECTED VARIETIES.

1. *Bridesmaid* (Turner).—Delicate pale lavender, edged with white; of fine form and substance; novel in colour. A good exhibition variety.
2. *Carminatum* (Turner).—Upper petals rich carmine, edged with white; lower petals flesh colour, mottled with crimson; good shape; medium trusses and constant.
3. *Emperor* (Turner).—Black upper petals, edged with white; lower petals white, mottled with purple; good form and excellent habit.
4. *Helen Faucit* (Turner).—Lower petals lilac, mottled with purplish crimson; upper petals dense crimson, with lilac edge. A striking and excellent variety.
5. *Madame Rougière*.—A French variety of great merit; rich crimson purple, with light throat, and edged with white; habit strong; form good. An excellent exhibition variety.
6. *Omar Pacha* (Turner).—General colour bright crimson, strong grower, and a free bloomer; striking and distinct.

(10s. 6d. to 21s. each.)

TWELVE OLDER SELECTED VARIETIES.

1. *Beauty of Slough* (Turner).—Deep rosy crimson.
2. *Brilliant* (Turner).—Bright crimson top petals; under petals delicate blush, mottled with crimson.
3. *Cloth of Silver* (Henderson).—Silvery white, with delicate rose blotch; under petals pure white. Excellent for exhibition.
4. *Cassandra* (Ayres).—Crimson and white; fine form.
5. *Celestial* (Ayres).—Bright light rose; good habit.
6. *Evening Star* (Henderson).—Purple, margined with white, and clear white centre. Excellent in form and substance.
7. *Lady Hume Campbell* (Henderson).—Bright scarlet crimson, with lilac centre. Excellent.
8. *Purpureum album* (Turner).—Rich purple, edged with white; white centre. Good and constant.
9. *Prima Donna* (Turner).—Upper petals violet purple, edged with white; lower petals pure white, spotted with purple; white centre. Good form and habit.
10. *Queen of Roses* (Turner).—Beautiful warm rose, suffused with lilac; white margins and centre. A really lovely, good variety.
11. *Resplendens* (Ambrose).—Crimson scarlet, with white centre. A beautiful variety.
12. *Victrix* (Ayres).—Light rose, with white edges and centre. Very excellent.

(2s. 6d. to 5s. each.)

TWELVE SELECTED FRENCH SPOTTED VARIETIES.

These are quite distinct from our English varieties, but more remarkable for the bizarre mixture of colours than for fine form. They are, however, well worthy of a place in every collection.

1. *Adèle Odier*.—Light lilac, clouded chocolate spot.
2. *Aurelia Duval*.—White and crimson, blended with carmine spot.

3. *Chauvière*.—White, blotched and spotted with deep purple.

4. *Ernest Duval*.—Lilac blotch, spotted and veined with purple and crimson.

5. *Godefroid*.—Upper petals rich crimson, edged with white, and blotched and clouded with dark maroon.

6. *Gustave Odier*.—Warm crimson rose, with crimson spot.

7. *James Odier*.—Bright carmine, clouded with dark maroon.

8. *Madame Lemichez*.—White, clouded with dark spots.

9. *Médaille d'Or*.—Rich crimson claret, blotched with maroon.

10. *Ne Plus Ultra*.—Bright maroon crimson, with black veins.

11. *Roi des Pourpres*.—Dark purple, blotched and veined with deep chocolate.

12. *Scaramouche*.—Rosy crimson, clouded and veined with rich cherry.

(18s. per dozen.)

NEW VARIEGATED GERANIUMS FOR BEDDING AND POT PURPOSES.

Alma (Turner).—A great improvement on Flower of the Day; foliage flatter, variegation purer, and the flowers brilliant scarlet.

Annie (Kinghorn).—Better than Silver King, with bright scarlet flower.

Mountain of Snow.—Large foliage, with broad white margin.

Variegated Tom Thumb.—Very dwarf and free bloomer.

(From 2s. 6d. to 7s. 6d. each.)

NEW SCARLET AND HORSESHOE GERANIUMS.

Attraction.—Bright scarlet; good habit and shape, and profuse bloomer. First-rate for bedding.

General Simpson (Speed).—Brilliant orange scarlet, with large white eye; good shape and large truss.

Indispensable.—Very dwarf habit and free bloomer. Excellent for small beds.

Lady Downes (Turner).—Rosy carmine; good shape and a large truss. Very distinct; unique for bedding.

Royal Dwarf.—Large truss. Excellent for bedding.

Richmond Gem (Kinghorn).—Light orange scarlet, with whitish stems; a remarkably distinct variety, blooming in large trusses. A strong grower.

Spitfire (Turner).—Brilliant scarlet; fine form, with deeply-marked horseshoe foliage; dwarf and distinct.

(From 1s. to 2s. 6d. each.)

T. APPLEBY.

WEAK BEES.—EARLIEST SWARM.

WE mentioned in these pages last season that when the Currants and Gooseberries are in bloom hives may be considered pretty safe, but if bad weather prevails afterwards weak bees require some attention. The weak bees are easily known by their movements in the middle of the day. If they loiter about the hives, and only fly off a few yards, returning with a sluggish hum, and are examined by those at the doorways before they enter, these are sure signs that the stocks are weak, and the bees are afraid of pillage by strangers.

In such cases the hives should be examined, and if light a little feeding, either at the bottom or top, closing the doors to keep out strange bees, is, perhaps, the only remedy.

But the most cheering sign, either before feeding or after, is observing a few bees entering the hives with pollen on their thighs. This tends to show that there are still hopes of future life in the colonies, that is, the queens are depositing eggs, and, perhaps, brood hatching, though slowly, owing to there not being a sufficient number of bees to keep up the proper heat for their growth.

With care during bad weather, like that of the present, such stocks may survive; still they must take the best part of the season before they can store up any spare honey or throw off swarms. On the other hand, strong stocks are readily known by the bees flying off quickly, and returning laden both with pollen and honey. These will soon require additional room to store up honey or increase new colonies.

Since the above was written we have heard of several friends losing their bees from the cause we have stated, though they appeared to be in pretty good condition about three weeks back. Then the weather was very mild; indeed, so much so that Mr. Mackie, of Banffshire, had a swarm of bees, which is, perhaps, the earliest on record. In case there be any doubts respecting its being a proper swarm the following is his reply to us on the subject:—

“Green Dykes, April 27th, 1857.

“DEAR SIR,—I beg to acknowledge the receipt of yours of the 20th. You want to know the fact of my bees swarming. It was on the 1st day of March, about 2 p.m. They clustered all right, and took to their new hive well. The old stock is three years old; it threw a fine swarm last year about the middle of June. It was very strong all winter, and working well in the month of February, but showed no sign of swarming. The reason of its doing so is quite a mystery to me, for as long as I have been a bee-monger I never had a young swarm sooner than the end of May. The old hive is well supplied with bees, and, as far as I see, they are doing well.”

The cause of this 1st of March swarm must be the great strength of the stock during winter, and the mildness of the weather in the latter part of February, and accords with our belief that bees in hot climates swarm repeatedly during the year.—J. WIGHTON.

[We have seen Mr. Mackie's letter. He resides at Green Dykes, Oudequhill, Banffshire. It is the earliest swarm of which we ever heard.—ED. C. G.]

POWER OF BEES TO PRODUCE HEAT.

It may possibly assist your correspondent, Mr. D. G. M'Lellan, in his speculations if I transcribe from my calendar a few extracts showing the winter temperature of a hive of bees relatively to that of the external atmosphere, a subject to which, as shown by the dates, I turned my attention many years ago:—

			Outside.	Inside.
1835.	Dec.	5 .. 1 p.m.	45	53
		11 .. 8 a.m.	25	42
		13 .. 9 ..	36	60
		* 23 .. 9 ..	26	43
		+ 25 .. 9 ..	22	42
1836.	Jan.	2 .. 8 ..	18	34
		3 .. 10 ..	35	64
		6 .. 9 ..	45	69
		17 .. 8 ..	36	45
	Feb.	7 .. 10 ..	42	55
		13 .. 1 p.m.	47	78
	Mar.	13 .. 9 a.m.	42	55
	Nov.	18 .. 8 ..	35	41
		27 .. 10 ..	49	51
	Dec.	10 .. 8 ..	35	41
		† 25 .. 9 ..	28	35
§ 1837.	Jan.	1 .. 10 ..	29	37

I confess I cannot come to the same conclusion as Mr. M'Lellan—that the bees have the power to generate warmth as needed; but when stimulated to motion either by the action of the sun and light upon the hive, or some accidental disturbance, an increased temperature results undoubtedly. Entire dependence, moreover, is not to be placed in an experiment thus conducted, as it is no unusual thing for a cluster of bees to remove nearer or further from the thermometer, or even to congregate about it, when a sensible difference is immediately seen in the mercury, the result of such casualty.—HENRY TAYLOR.

* On this day in a second hive it was 32°, and in a third hive 51°.

†	..	..	30	..	53
‡	..	..	34	..	34
§	..	..	39	..	

NEW AND RARE PLANTS.

COMPARETTIA FALCATA (*Sickle-leaved Comparettia*).

A crimson-flowered Orchid, found upon trees between Cassapi and Pampayaco, in Peru. It was named after A. Comparetti, a professor of botany at Padua. It flowered in the stove at Kew in December, 1856.—(*Botanical Magazine*, t. 4980.)

BEFARIA MATHEWSII (*Mr. Mathews's Befaria*).

A native of the Peruvian Mountains, at an elevation of from 6000 to 11,000 feet, whence Mr. Lobb sent it to Messrs. Veitch, of the Exeter and Chelsea Nurseries. Flowers sulphur-coloured. It bloomed in March, 1857, and only requires greenhouse treatment.—(*Ibid.* t. 4981.)

AERIDES CYLINDRICUM (*Cylindrical-leaved Aërides*).

A native of Hindostan, in the Jyamally Hills, of Coimbatore. Flowers white. It bloomed at Mr. Parker's, Hornsey, in February, 1857.—(*Ibid.* t. 4982.)

BEGONIA HERACLEIFOLIA var. NIGRICANS (*Hog-weed Begonia* var. *Blackish-leaved*).

This has also been called *Gireoudia*, but with the same specific name. Native of Mexico. Flowers white and pink. Blooms in winter.—(*Ibid.* t. 4983.)

BEGONIA GRIFFITHII (*Mr. Griffith's Begonia*).

The handsomest leaved of all the Begonias. Native of Bhootan. Introduced by Messrs. Henderson, of the Wellington Road Nursery, St. John's Wood, and called by them erroneously *B. picta*, which is a different plant. Its flowers, which are white and pink, open during the winter and spring months. It is a stove plant.—(*Ibid.* t. 4984.)

THUNBERGIA LAURIFOLIA (*Laurel-leaved Thunbergia*).

A native of the Malayan peninsula, raised from seed received thence by Mr. Ingram, of Frogmore Gardens. It is a rapidly-growing stove climber. Blooms at various seasons. The flowers are pale blue, with a yellowish eye.—(*Ibid.* t. 4985.)

MUSHROOMS DEFICIENT IN FLAVOUR.— ON CUCUMBER BEDS.

A CORRESPONDENT, having complained of forced Mushrooms having little or no flavour, wishes to know the cause, and, if practicable, the cure also. This is not an unusual complaint, and where Mushrooms are grown in mid-winter is not easily prevented. One primary cause I believe to be the variety of Mushroom grown, as well as the artificial position it is placed in, as we all know that forced fruits of all hardy kinds are inferior in flavour to the same grown out of doors, and Mushrooms are possibly no exception to that rule. Rhubarb certainly is not so good forced unless it has had a good share of fresh air, and most likely the same beneficial agent will effect a partial cure in the case of Mushrooms; but this cannot well be had in December and following months. Our correspondent had better, therefore, ascertain from whence the soil comes that the beds are top dressed with, as a chalky soil is likely to have an injurious effect, and one containing too much iron is likewise to be avoided. If the soil be taken from a pasture known to produce Mushrooms naturally, and the other conditions to their growth are favourable, it is probable they will be tolerably flavoured, provided some accession of fresh air can be given. It would also be well to examine the produce, and see if there be any fault there, for a good Mushroom ought to smell well, and the back be rather brown and rough than white and smooth, and in substance it ought to be fleshy, not thin and light. Much, of course, depends on the conditions of its growth; but in a general way the quality of Mushrooms at Christmas is not so much an object of criticism as the fact of having them then. Nevertheless, it would be advisable to have them good if possible, and I hope the mode pointed out will be of service to the inquiring correspondent.

Another inquirer, who grows ridge Cucumbers extensively,

is anxious to grow Mushrooms on the same ground. He says he digs holes or trenches two feet deep and three feet wide, which he fills with hot stable dung, covering that with sifted soil for the Cucumbers. Now, there is every probability of his growing Mushrooms in this way, provided he takes care that the dung is not too hot, which is not likely to be the case unless it be altogether fresh droppings, which is not probable; but he can easily ascertain that, and if the heat is only about 70° or 75° he may safely plant some spawn on the top of the dung before putting on the soil, and in most instances there will be Mushrooms in autumn; but then it must be borne in mind that these only come into use when Mushrooms are tolerably plentiful out of doors, and consequently are less novel, but by covering up a little after the Cucumbers are gone a late supply may be had. Mushroom spawn is often put in with other crops as well, but great uncertainty hangs over it, and very often the ground is obliged to be disturbed before the Mushrooms come into use, and by that means they are destroyed. Decidedly the best Mushrooms I have ever seen have been grown in hotbeds made up for Melons or Cucumbers, and even then it is often six months and more before there are any, and still a good sprinkling will be produced. It is only proper here to observe that much uncertainty at all times hangs over this crop, as is proved by the natural produce in a wild state; still, with perseverance and trying various plans, a tolerable share of success may be depended on.

It is useless aiming at Mushrooms anywhere without good, useful spawn, which is not always good, and may have been deteriorated by keeping. When there is the means of making it during the summer it is best to do so, or some good spawn may be obtained from old beds; but these latter pieces do not keep so well as the prepared cakes, though for immediate planting they are quite as well, but good spawn may be had of many dealers, and when good will go a long way; but

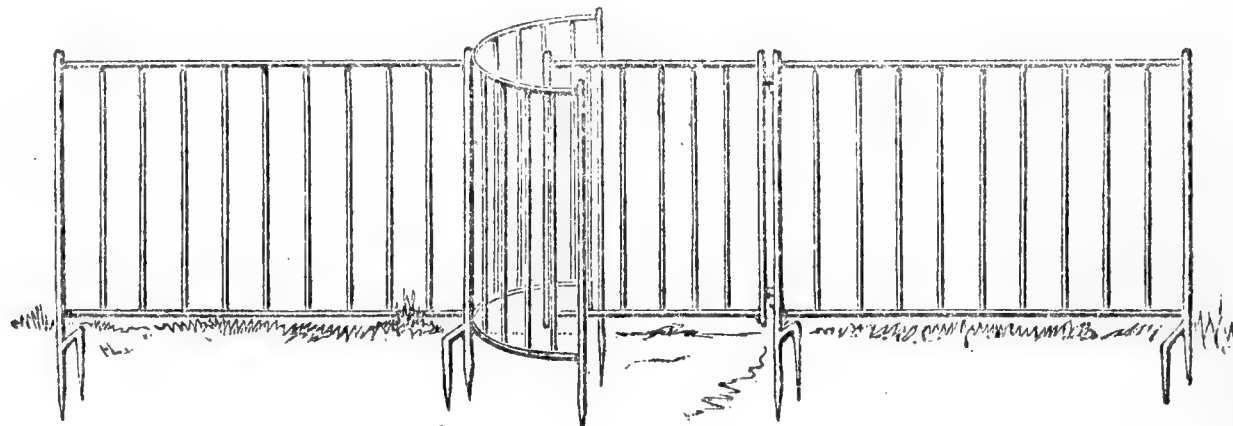
it is not advisable to break it into pieces smaller than a good-sized orange, and its vitality, even under favourable circumstances, ought not to be entirely condemned much under three months, but it will often produce crops in half that time. More particulars, however, will be given on Mushroom beds in winter as the season advances, and those who are anxious to try at making spawn will find ample directions in some of our back numbers. Other points will be treated on in due time.—J. ROBSON.

EARLY SWARM.—I have this afternoon (May 9th) had a very large swarm of bees, which are safely hived and going on well. I have three other stalls very strong, and if a warm day to-morrow I expect another swarm or two. The weather has been so cold that I did not expect them so early, and these being the first I have heard of, I thought you would like to know.—J. S. HAYWOOD, *Nursery, Lower Wick, near Worcester.*

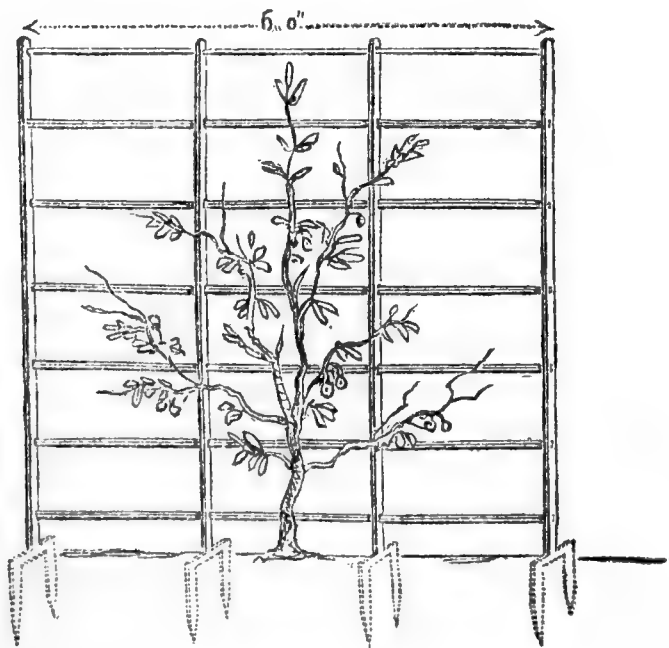
IMPLEMENTS CONNECTED WITH THE GARDEN AND THE HOUSEHOLD EXHIBITED AT THE ROYAL AGRICULTURAL SOCIETY'S SHOW.

BESIDES most of the usual implements serviceable to the gardener, Messrs. Cottam and Hallen, 2, Winsley Street, Oxford Street, exhibited the following:—

FOOTPATH OR ACCOMMODATION GATE AND CURVE.—These are united and fixed in a line with strained wire, hurdle, or continued fencing, and are remarkably neat and convenient for admitting, whilst separating, from one part of the grounds to the other.

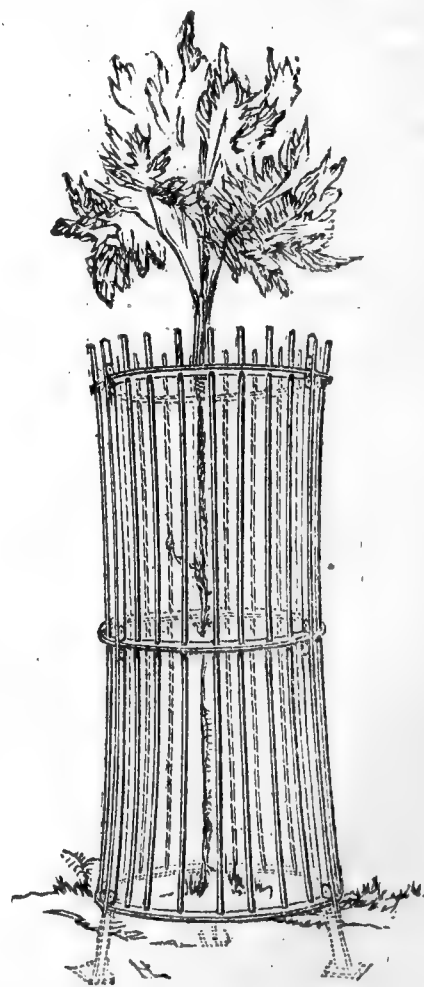


ESPALIER HURDLES.—These are also very neat, and we need do no more than remark upon their durability compared with similar structures of wood. They are neatest in appearance when painted a greenish grey, so as to be least distinguishable from the branches of the tree.



WROUGHT-IRON TREE GUARD.—Where sheep or other grazing animals are admitted upon grass within view of the

house, and trees are planted in the pasture or lawn, no guard is either so ornamental or effectual as this.



BERBERIS HYPOLEUCA.

RAISED from seeds received from Dr. Royle, and said to be from the North of India.

A very fine evergreen, with leaves from two to three inches long and one and a half broad, of a dull green colour above, white beneath, strongly reticulated on both sides, and often bordered with reddish purple. Flowers pale yellow, small, and in racemes not larger than the leaves.

A hardy shrub, only injured by very severe winters. It grows freely in any good garden soil, and is increased by seeds, which should be sown directly they are ripe.

It forms a fine, handsome, evergreen bush, well suited for planting in sheltered situations on account of its beautiful foliage. It flowers in May.—(*Horticultural Society's Journal*.)



QUERIES AND ANSWERS.

PLANTING OUT LARGE CAMELLIAS.

"I am making a considerable addition to a greenhouse, and in the new part I wish to have some of my largest Camellias planted in the ground. Now, do you consider this a favourable time for transplanting them? I am desirous of taking your advice before proceeding in this matter, as I should be extremely sorry to lose any of the plants, being of very fine growth and size. The Camellias have all done flowering, and are now making much new wood.

Also, supposing it a fit time for transplanting, in what manner would you proceed? Would you lift the plants entirely out of the pots and tubs, and loosen the soil about the roots? or would you crack the pots, and so place them in the ground, and allow the roots of the plants to push their own way through into the soil? By this latter method I thought the growth might, in some degree, be checked, and that the plants, instead of turning all their strength into wood, might still flower abundantly next season."—A NEW SUBSCRIBER.

[If you did not wish your plants to become much larger we should have no objection to your cracking the pots and tubs as you propose; but if you wish them to grow freely, as well as bloom freely, then turn the plants out, and, provided they have plenty of air and sunlight to perfect the buds, there will be no deficiency of flowers. The time we should have preferred would have been as soon as they had done flowering, and before beginning to grow freely. It would be safest now to defer the operation for six weeks or two months, until the wood was getting a little hardened, unless you could shade for a short time from bright sunshine. With this shading at command we would as soon do it now as not. We should proceed thus:—Give the plants a thorough soaking, so as to make sure that every part of the ball is thoroughly wetted, and let them drain then for a day or two. Prepare the places for them. Take the plants carefully out of the pots, &c., and place them in the desired position, and so that the collar of the plant shall stand a little deeper than before; then pick the outside of the ball with a little stick, so as to disentangle the roots there as much as possible, but without going very far into the ball. The drainage may be all left, and the roots near the bottom brought out in the same way, so as to be packed in the new compost. Do this regularly all round, and finish with a basin round the plant, so that in watering the greatest portion of the liquid may be thrown upon the old ball, as that is where there will be danger of suffering from drought. We should have mentioned that the place so planted should have been properly drained, so as to prevent anything like stagnant moisture. Fibry, good loam, with pieces of charcoal and bits of soft freestone, should form the main portion of the compost. A little rough leaf mould may be

added, and, at planting, a portion of heath soil and a little silver sand may be placed among the loam immediately round the ball and among the disentangled roots. We should prefer this simple to any more elaborate or rich compost. In the loam the shoots will be firm and short-jointed, and if strength is wanted it is easily given by manure waterings when the plants are growing freely and blooming. If done now, and the plants are growing freely, shading and syringing will be required until the plants will stand the sun uninjured. If plenty of light and air are given afterwards there will be no danger of not blooming well next year.]

VERONICA HENDERSONII AND COCCINEA CULTURE.—CAMELLIAS SHEDDING THEIR BUDS.

"I have a plant of the former, two years old, which has grown too large for the space I can spare in my small greenhouse. Will it bear cutting back, and if so, when should it be done, and how far back should it be cut? Will cutting it back spoil it for flowering next season? Should *coccinea* be cut back at the same time? Also please to say how and when to propagate them.

"My *Camellias* this year dropped their flower-buds, although looking perfectly healthy in other respects. I have, therefore, cut them back, about two months since, nearly to the old wood, and they are now breaking nicely in the lower parts. Will they, after being cut back, flower next season? I have no pits or forcing beds, only a cool greenhouse with north-east aspect.

"Does the *Eccremocarpus* require a large pot to flower in?

"*Cyclamens* and *Deutzia gracilis*, though vigorous, are not flowering. Can you tell me the reason?"—E. C.

[If your *Veronicas* are stumped in very much there will be little danger of their not breaking nicely, so as to form good bushy plants; but there will be a risk of their not flowering next year if you keep them during the summer in a north-east aspect; but if you could place them in a sunny spot out of doors after the middle of August until the middle of October there would be every chance of their flowering. If you pruned back, after flowering, to near the base of last year's wood, there would be less risk of their not flowering,

The sooner you cut them in the better. Keep them close, and syringe the head for a short time afterwards. As to propagating, you will find some nice stubby side-shoots on your plants now most likely, and these slipped off close to the older stem, inserted in sand, and covered with a bell-glass, will soon strike with the usual amount of attention to giving air, watering, &c.; but if such shoots cannot be found you will get plenty of nice young ones in a short time after you have pruned back, and some of these, when two inches in length, may be slipped off in a similar manner. If you could give these a little extra heat, and treat them otherwise in a similar way, they will strike sooner than those older, stubby shoots first alluded to; but in your case they will be more apt to damp or shrivel if extra attention is not given them.

Either the *Cyclamen* tubers were not properly ripened last season or they received too much water, and were not duly rested after the leaves began to decay.

We have never seen the *Deutzia* fail, and can only attribute it to a free growth in a somewhat shady place in the autumn. Give it plenty of sunlight in autumn, keep it cool and dryish in winter, and, as the sun gains power in the spring, increase the water, and it will be a perfect mass of white bloom.

Very likely your *Camellias* dropped their buds from being over healthy and luxuriant. The cutting back might be necessary for keeping your plants in a smaller compass, or making them more bushy, but will have but little influence on the buds dropping or not dropping. Keep them closish in your house now, syringe them frequently, shade from the sun if very hot, and then by August move them gradually to air and exposure, towards the end of the month out of doors if practicable, and we see no reason why you should not have flowers next year. House them before the end of October. Flower-buds often drop from the roots being cooled by frost, or clogged with moisture, or allowed to become too dry.

The *Eccremocarpus* will bloom very well in a twelve or fourteen-inch pot, and even in a smaller one if the head-room is limited.]

HOW TO SOW THE SEEDS OF ANNUALS.

"Which is the best way to sow annuals? I had a hole made about six inches deep, filled to the top with manure, a little fine clay over, and on that I sowed the seed, covering it lightly. Is this the best way to have good flowers?"—A BEGINNER.

[The best way to sow annuals is to have the patches in straight rows along the border, and to mark out all the patches in one row first, each mark being circular and one foot across, made by the forefinger, the ring being just one quarter of an inch deep for all seeds that are as large or larger than Mignonette, and for smaller seeds a mere scratch to show the ring. Lupin and Pea-like seeds to be sown *only in the ring*; but all smaller seeds to be sown both in the ring and over the *bare surface* within it, and the stirring to cover the seeds in the ring will be sufficient to cover the seeds inside it. When the soil is poor the best mode of sowing is to give a good "dressing" of rotten compost at the time of digging the border; but to dig out holes for the patches is a very good plan. Ninety-nine out of every hundred kinds of annual seeds will do to scatter or sow on the surface, and then to rake it gently. Loam, not clay, is the soil for sowing on.]

DAPHNE CNEORUM CULTURE.

"In a recent number you allude to a plant of the *Daphne cneorum* as a bedding plant for spring, and refer to a specimen at Surbiton in a bed four feet six inches in diameter, which it completely filled. I remember, half a century back, a similar bed in a suburban garden at Bromley, in Middlesex, which was considered quite unrivalled; so much so, that on the owners leaving the place it was removed to a first-rate garden in Kent. Since that time I have seen the plant repeatedly, tried it frequently in my own garden, and purchased it from first-rate nursery grounds, but never have seen it other than a straggling-growing plant, and even if tolerably grown

the first year it never failed the year after to throw out long, naked stems, with groups of leaves and flowers at the extremities. At the present time I have one which I have layered, but it does not seem to have taken root, nor seem likely to throw out fresh stems, although it has been layered by a nursery gardener some six weeks. If the owner of the plant at Surbiton would state the treatment he bestowed on his plant, soil, &c., he would confer an obligation; for you are unquestionably correct in saying that, if it could be made to grow properly and with certainty, it would be a first-rate bedding plant, beating all *Verbenas* out of the field, as the perfume may compete with *Roses* or *Violets*, and the form and colour of leaf and flower leave nothing to desire. The variety of colour, however, in the *Verbena*, and its being a summer, not a spring flower, would prevent rivalry between the two. I am, however, certain that it is the difficulty in cultivation alone that prevents the *Daphne cneorum* from being constantly employed for spring beds."—H. M., Herts.

[The secret of growing the *Daphne cneorum* into a large specimen is this:—Plant it on a dry bottom in deep, poor, and very sandy soil, and never disturb it or the bed for the next thirty or forty years. For the first few years it may grow faster than it can clothe with leaves, but after awhile it will cover itself with leaves as much as a bed of *Verbenas*.

The owner of the plant at Surbiton, or his grand or great grandfather, had it planted in an "American bed," which a "fresh tenant" wished to modernise on the principles set forth in THE COTTAGE GARDENER, a stipulation being made that the *Daphne* should not be destroyed, because it was a favourite plant in the family. The bed was therefore reduced to a circle four feet and a half across, that being the size of the one plant, which is as full of leaves all over as any *Verbena* ever was, and no *Verbena* ever flowered more uniformly over a bed or more profusely. But such is not the way to manage the *Daphne* for a May bed in the flower garden. It should be removed as soon as the flower is over. We used to do so with one bed of it from 1830 to 1836, and nothing could do better. The next bed to it was of *Tournefortia heliotropioides*, another of the most perfect style of bedding plants, but one we could not manage well in a distant part of the country. June is the right time to layer the young growths of *Daphne cneorum*. They root as freely as *Willows*, without cutting or tonguing—merely to pack them well in sandy soil; the layers to be taken up next February and planted in bunches—not in single plants—in the flower-bed to bloom next May, just as we do *Polyanthuses*. We shift them to another place a week or two before we layer the *Daphne*, and February is the best time to remove both to where they are to bloom. The whole family of *Daphnes* prefer light, sandy soil and a dry bottom.

Our snugery was supplied with cut flowers of *Daphne* this winter from a garden very near Dublin Castle. The kind was *Daphne collina*, which bloomed beautifully all the winter round the Irish capital, but the Irish thereabouts want stirring up.]

EARLY SPRING FLOWERS.

"Thanks to Mr. Beaton for the pleasure that he has afforded us by calling attention to the early and beautiful productions of our gardens. The *Scillas* are indeed gems, and cheering have been the masses of the beautiful blue *Anemone Apennina*, contrasted with the *A. ranunculoides* of bright orange, and the silver stars and beautiful leaves of *Sanguinaria Canadensis*, succeeded as they now are by *Iberis tenoreana*, *Pulmonaria Virginica*, *Trillium grandiflorum*, and the many varieties of *Anemone hortensis*."—A CONSTANT READER.

[While on the subject of spring flowers let us earnestly point to the practical value of recording the names of the places where such British plants as are very scarce and seldom met with are found. Sir James Smith knew of two places only where the rare *Tulip* grows. The lady who opened this part of the "discussion" did not say where the wood is from which she tried in vain to transplant *Tulipa sylvestris* in bloom. We have pointed out two miles south of Gloucester, where it grows among scanty herbage, and here "A CONSTANT READER" says "it is found growing

in the meadows of Yorkshire." Where in Yorkshire? We know many of them, but never saw this Tulip there. How many of our garden writers can point the way wanderer to where "masses of the beautiful blue *Anemone Apennina*" grow wild, or of the "contrasted *Anemone ranunculoides* of bright orange?" We never saw this beautiful blue *Anemone* till it caught our eye the other day in the show-house in the Pine Apple Place Nursery, and we believe this is the first time it has been mentioned practically in works on modern gardening. Miller says, "It grows naturally in some parts of England (specify the exact localities), but particularly at Wimbledon, in Surrey, in a wood near the mansion-house, in great plenty; but it is not certain that they were not originally planted there, as they are not found in any other place in that neighbourhood." We knew of only one locality for *Anemone ranunculoides* in Suffolk, and that escapes our memory. We care not a straw for mere botanical plants, native or foreign; but we would sell the buckles off our belt to purchase spring flowers, rare natives of our common country, were we not aware that the experiment on our corporation would be dangerous to the interest of the commonwealth. The first, last, and the only time we have seen *Sanguinaria Canadensis* done well in England was in the nursery of the Messrs. Dickson, at Chester, in 1831; but in the north it was one of the common flowers of our childhood. It is as easy to grow, to flower, and to keep as the Scotch Crocus, and is one of the prettiest little spring flowers in the world. It is the Daisy of the Canadian woods, and with the red juice of its fleshy tubers the Red Indians renew their gloss annually after the melting of the snow. *Iberis Tenoreana* must have a capital T to the second name, being that of a most worthy Italian botanist of the present day—"Tenore, our old friend." The *Pulmonarias*, again, are most elegant spring flowers, which one hardly ever sees now-a-days, but they are as fickle as a fairy queen. *Sibirica* and *maritima* are quite as good as *Virginica*. In most places they require a sheltered situation and a deep soil, composed of three parts sand and one part leaf mould, or the nearest compost to that standard. A bed just after the Scilla beds is the place for them, and the three should go together, being British, American, and Siberian forms of the same species or kind.

The *Trilliums*, the last of this batch, we can only recommend to such practical amateurs as have had long experience; first-rate gardeners can do nothing with them—they require more care than gardeners can delegate to others. The best *Trilliums* we ever saw were in a sandy peat bed on the north side of a high hedge in the Chester Nursery at the time aforesaid, and we believe the Messrs. Low, of Clapton, to be the largest importers of them, and all such North American style of plants. But let us have the localities of our rare native spring flowers recorded while they are fresh in our minds. THE COTTAGE GARDENER is an excellent memorandum-book, which everybody reads; and, which is even still better, everybody trusts it, and well they may.—D. B.

Let us help friend D. B. as to the localities where *Anemone Apennina* have been found. In Wimbledon Wood; near Harrow-on-the-hill; Luton Hoe, Bedfordshire; and near Berkhamstead, Herts—"all suspicious places," as Withering observes; but, suspicious or free from suspicion of having escaped from gardens, we shall be much obliged by any one saying exactly where this or any other rare beautiful native flower can be found.—Ed. C. G.]

TREATMENT OF AFRICAN BULBS.

"'HARRIE' has got some bulbs that came from the South of Africa. She planted them some weeks since, and put them into a hotbed frame; still they do not show any signs of growth. She will feel obliged if the proprietors of THE COTTAGE GARDENER will tell her what she had better do with them—if they ought to be kept wet or dry. The bulbs were put into sand and loam."

[You have done quite right—that is the way to treat all bulbs from South Africa. A "hotbed frame," however, must not be understood to mean a hotbed—that phrase belongs to an extinct race of authors; the present name is "a cold frame." All South African bulbs should be potted and be

put in cold frames, and should they remain three years before they are recovered they ought not, most certainly, to receive one degree of artificial heat during the whole time beyond keeping the frost from them like other greenhouse plants. All the small bulbs from thence ought to be first put into sandy peat, and be covered one half inch; and the whole of the large Cape bulbs will soon be poisoned, as it were, if their roots get into peat before they have recovered from the journey, and from having been dug up at the wrong season. They should not be in large pots, and yet it is more safe in our damp climate to have them covered up to the neck, this being the natural time for large Cape bulbs to go to rest. Your big one may not sprout till September, but never mind that. You may keep the soil a little damp the whole time.]

FIG TREES SHEDDING THEIR FRUIT.—GUANO FOR LAWNS.

"I have three young and very healthy-looking Fig trees in flower-pots which were placed in the vinery this spring. They gave the promise of much fruit, but it has all dropped off, having previously turned yellow. Would you kindly tell me the cause, and how I am to prevent it in future?"

"Would you recommend a lawn that was made last year, partly with sods and partly with seed, to be watered with guano in the proportion of one ounce to two gallons of water, or do you think the lawn would be better without it?"—M. F.

[Young Fig trees will cast their fruit as you say if ever they get dry. Get the wood well ripened before autumn, and next year place saucers below the pots, and keep about half an inch of water in them. Your Fig trees will very likely give you a good second crop if you keep them in the vinery and give them light enough; but you must be sure of giving them plenty of water. In winter they want little or none, but when growing they can hardly have too much if the pots are well drained. Water standing about the roots will injure them, except just a little in a saucer when they are in pots.

If the lawn is at all nice we should dispense with the guano—it will give so much work for the scythe.]

MOSS AND PLANTAINS IN A LAWN.

"Will you inform me if there is any way of getting moss and Plantain out of lawns? I have had the Plantain cut out several times, and sown white Clover, &c., in its place, but find it soon comes up again, much to my annoyance."—A NEW SUBSCRIBER.

[You are not aware, then, that the lady's friend, THE COTTAGE GARDENER, will not hear of a lawn without moss? Short grass without a bottom of moss is only fit to walk on for about five or six weeks in the height of summer in this climate. When the Horticultural Society was in feather, some fifteen years since, they, or their representatives, opened a regular siege against mossy lawns, and they advised all sorts of nasty, dirty, stinking things to be thrown on the face of our carpet lawns to get rid of moss! No wonder, therefore, that people so devoid of judgment came to the dogs. The want of a little moss has ruined thousands and tens of thousands of the best lawns that ever came from seeds, for this reason—gardeners will have closely-shaven lawns by the end of May, and every hot summer the grass "burns" more or less in June; thus in time all the finer grasses perish outright, and the worms take the lead; then scraping, scratching, and sweeping, will soon make a patchy lawn of it, and a welcome bed for the seeds of all kinds of weeds, from all of which, and more besides, a thin coat of moss would preserve us. But, like upstarts and gunpowder, moss makes a bad master; it must be kept under foot, and the winter, being its natural time for growing, is the time to look to it. A close mowing in November, in February, and in March, will make it exquisitely comfortable to walk on, and preserve the finer grasses. No weed is easier to get rid of than the Plantain, for it never comes a second time if the carrot root-stock is got out; but to cut the root-stock half way down increases it fourfold. We wish that Daisies could be kept off so easily.]

PHOTOGRAPHY FOR GARDENERS.

"1. In copying with salt and nitrate of silver the pictures are good for a day or two, but then brown patches come through the paper to its surface, which make a leaf look as if it had the red spider. What is the reason?"

[The photographs were not soaked long enough in the hyposulphate solution.]

"2. How much ought I to give for a lens glass for a camera like that described?" [Two shillings.]—SPOTTED RESULT.

"Perhaps Mr. Copland will inform me whether the process adopted by the London photographers for taking their one shilling likenesses could be applied to our purposes in producing representations of trees? If so, will he favour us with the details?"—LANDSCAPE GARDENER.

[You are right. The collodion process is particularly suitable where rapidity of action is desired. The additional apparatus you will require is as follows:—

	Cost.
Twenty-four pieces of <i>clear</i> , thin glass, each 2½ inches by 2 inches	s. d. 1 0
Glass vertical bath* and stand, inside dimensions 4 inches by 3 inches	3 0
Glass dipper	0 6

CHEMICALS.

A.—1 oz. iodized positive collodion ..	0 9
B.—120 grs. nitrate of silver in 4 ozs. distilled water	1 6
C.—24 grs. sulphate of iron, 40 minims glacial acetic acid, 2 ozs. distilled water	0 6
D.—1 oz. hyposulphate of soda in 1 pint common water	0 4

Clean the glass plates. If greasy, use tripoli and water, and finish with wash leather.

For the succeeding manipulation the yellowed light of the operating room is necessary.

Take up a plate by one of its corners, and, holding it in a perfectly horizontal position, pour over its surface an even coat of solution A, returning the surplus collodion to the bottle by tilting the plate.

Pour solution B into the glass bath.

Place the collodionized plate on the dipper, and lower quickly into the nitrate of silver. After half a minute lift it once or twice out of the bath. When a greasy appearance at first noticeable has gone off, remove, and place it in the camera frame.

The time of exposure varies with the light, averaging about a minute.

Remove the camera to your dark room, and cover the prepared side of the plate with solution C.

When the picture is sufficiently intense the plate must be laid, face uppermost, in a flat dish containing solution D, when a clearing process is observable.

The whole image having sharpened, thoroughly wash off the hyposulphate with common water. When dry, back with black velvet, silk, or liquid jet.

After "LANDSCAPE GARDENER" has photographed all the trees in his way he can turn his camera upon the young olive branches of his household.—E. A. COPLAND.

N.B.—India-rubber finger-stalls for lady photographers can be had at Squire's Photographic Warehouse.]

TO CORRESPONDENTS.

CUTTING DOWN LAURESTINUS (*South Devon*).—Your seven-foot-high Laurestinus may be cut down to five feet high now, unless they have grown much. If they have you had better wait until next April. Cut with a sharp knife wherever the branches are not too large. Where they are too large for so cutting use a saw, and trim the edges of the wounds smooth with a knife.

STRAWBERRIES (*An Ardent Amateur*).—The *British Queen* will not succeed on some soils, and your very light soil seems to be one of them. Plant *Keens' Seedling*, *Sir Harry*, and *Carolina superba* in its place. You must reduce the strength of your house slops for everything except Asparagus, Rhubarb, and the Cabbage tribe. One bucket of the house

sewage to four buckets of water will be about the proportion. You may give it to your Strawberries twice a week now they are in bloom, and remember when once you commence watering Strawberries you must continue it daily in dry weather. You may add carbonate of ammonia to the hard water in the proportion we mentioned last week. *Prince Albert* is the earliest Rhubarb.

CONSUMING SMOKE (*J. N.*).—Mr. Fish says, "I can say nothing definite on this subject as respects bituminous coal. I have used Witty's furnace with good effect. I some time ago had the furnace doors made double—a space of an inch, or rather more, between, and all close except at the bottom, which was open. A turn round in the centre of the door admitted air to this cavity at pleasure; and shortly after lighting the fire, when a little air was thus admitted, the thick smoke was at once changed to a vapoury substance. The ash-pit doors were kept close. The plan of thus admitting the air answered well; but the reckless use of pokers and flinging the doors back with a vengeance, as young stokers will do unless watched, soon broke and disarranged the whole affair. I have also tried with good effect admitting a small stream of air from the outside not far from the furnace, and thus I thought that I increased the heat about the boiler and lessened the smoke very much. In a private letter from Mr. F—— lately he tells me he is making many trials for burning the smoke in furnaces, and if anybody will succeed I am sure he will; but I do not feel at liberty to refer our correspondent to him." If we were in your position we should inquire among those manufacturers in London who have been compelled to consume their smoke what plans they have adopted. Can any one inform us of an effectual plan for consuming the smoke of hothouse and greenhouse furnaces? They will oblige us by so doing.

MANUAL OF GREENHOUSE PLANTS (*W. B. Clarke*).—One of our "Manuals" will treat of these.

SEDUM ACRE (*E. H. K.*).—This, the common Stonecrop, can be had anywhere. It is a variety with golden variegated tips to its shoots that is in request.

WINE MAKING (*T. Taylor*).—The best instructions on this subject ever published are in Nos. 97, 161, and 165 of THE COTTAGE GARDENER. They are by Mr. Livett, a man of science and a practical wine maker. A manual, "Wine Making for the Many," is preparing.

CANADA FREE GRANTS (*Brian Riley*).—Buy the *Canada Times*. It is published in London fortnightly. It will tell you what you wish to know.

TOP DRESSINGS (*An Old Subscriber*).—We never use these, but if obliged to do so we should use a mixture of common salt, Epsom salt, and soot to the Potatoes, scattering it and hoeing it in between the rows. Guano or blood manure will do for your Asters, but must not touch their leaves.

SMALL GREENHOUSE (*A Subscriber*).—Spend fourpence on the manual "Greenhouses for the Many," and you will find full particulars of a £5 greenhouse. If you prefer a span-roof you will also see a plan of a very cheap and useful one as now existing at Hitchin. A small flue either below or above the floor would answer your case best. We would, even at the risk of repeating over and over again what has been stated lately, give definite directions if your premises were more definite. For a lean-to house ten feet long make it say ten feet wide, nine feet at back, and six feet in front, half of that to be glass, and the ends of even three feet glass also if convenient. The cost will be little with a flue. Two bricks on edge will be deep enough, and five or six inches wide inside. The cost will depend on how the work is done. We have frequently shown how cheaply Messrs. Lane and Rivers put up their houses.

FRUIT TREES (*C. M.*).—Apples and Pears grafted into a Potato will not grow. Have the roots of your trees got into a cold subsoil, or is your situation low and exposed? Ants have nothing to do with the failure of the fruit. If you make a horizontal line of gas tar near the ground on your wall, and one round the stem of your tree, you will prevent ants from ascending.

BEEF OR MANGOLD WURTZEL WINE (*Home-made*).—From the quantity of sugar it contains no doubt good wine can be made from it. The same receipt as for Parsnips we should think would do. Can any of our correspondents give us some information on the subject?

MUSHROOMS ON RIDGE CUCUMBER BEDS (*H. F.*).—You will see an article in to-day's paper on the subject. All we need say here in addition to what is there explained is, be sure and not injure the propagation of the spawn when you remove the old worn-out Cucumber plants at the end of September, and, if the weather be very dry then, give them some water, and your success will be fully in accordance with your wishes.

MUSHROOMS LACKING FLAVOUR (*A. S.*).—Your case is so fully entered into in another part of this paper, that we need not repeat it further here than that we shall be glad to hear from you again if the remedies there pointed out should fail; but you must not expect Mushrooms in the purely artificial condition they are in when forced into use at a period diametrically opposite to that in which they are produced naturally to be so good, but they may, doubtless, be better than you represent yours to be. Let us hear from you again if your next crop is not improved.

CYCLAMENS (*Miss Watkins*).—We cannot undertake to guess what kind of Cyclamen yours is that is in flower at this time; but if it belongs to the greenhouse section it may be some variety of the *C. Persicum*; but if it belongs to either of the hardy border kinds it may be some variety of *C. Europæum*, or *hederifolium* as it is often called.

NAMES OF PLANTS (*Fillingham*).—The Virginian Lungwort, *Pulmonaria Virginica*. (*H. W.*).—Your flower and leaf are from the *Celsia Cretica*. (*G. A., Glasgow*).—Your *Sida pulchella* is *Abutilon pulchellum* in THE COTTAGE GARDENER'S DICTIONARY. *Bæckia* is a greenhouse plant, but which species we cannot tell from the seed. The third packet of seed is of *Acacia lophantha*.

* Squire's, 54, King William Street, City.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JUNE 3rd, 4th, and 5th. BATH AND WEST OF ENGLAND. Sec., Mr. John Kingsbury, 10, Hammet Street, Taunton. Entries close the 1st of May.

JUNE 26th. EXETER. Sec., T. W. Gray, Esq., Queen Street, Exeter.

JULY 8th, 9th, and 10th, 1857. LEAMINGTON. Sec., Thomas Grove.

JULY 9th. PRESCOT. Sec., J. F. Ollard.

JULY 28th, 29th, and 30th. SHEFFIELD, SOUTH YORKSHIRE, AND NORTH DERBYSHIRE. Sec., William Henry Dawson, Fig Tree Lane, Sheffield.

AUGUST 8th, 10th, 11th, and 12th. CRYSTAL PALACE. Sec., W. Houghton.

AUGUST 19. BRIDLINGTON. Sec., Mr. Thomas Cape.

SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.

SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Sec., Mr. H. Churchill, King's Head Hotel.

OCTOBER 1st and 2nd. WORCESTER.

NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.

DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.

JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.

JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.

N.B.—Secretaries will oblige us by sending early copies of their lists.

GENERAL COLLECTION PREMIUMS.

AMONG the many subjects that now press heavily on the attention of poultry amateurs, in reference to the general rules and appointments of our public exhibitions, there are few, if any, more deserving of their peculiar solicitude than the determination of the most advisable plans to be invariably adopted for awarding the very valuable plate prizes now so generally offered at our principal meetings "for the best general collection." As already hinted by myself in THE COTTAGE GARDENER of Feb. 10th in this present year, it is obvious that these much-coveted premiums may be either beneficial or, on the contrary, detrimental to the future interests of a Poultry Show, precisely as they may bear convincing and OUTWARD evidence of the rectitude and impartiality of the principle on which they are determined. The time of the year now prohibits the continuance of poultry competition; all of us are busily engaged in the hope of rearing distinguished specimens in the coming contests that will shortly ensue; and, as your space allotted to poultry matters is thus less replete with reports of passing exhibitions, surely no more appropriate season to settle this knotty point can offer itself than the present one. Few can deny that there is scarcely any subject possessing more vital interest than the one at issue. It does not exclusively affect the interests of the wealthy amateur only, but equally that of the humble individual who, perchance, by great personal exertions, and even by considerable self-denial, exhibits in one single pen the entire effort of many months' previous care and constant solicitude. His has been the product of successful amateur "breeding," whilst his colossal opponent relies principally for position on a well-filled purse, combined with constant determination to "claim" all rivals that stand between him and continual prize-taking. In all such cases the actually intrinsic value of the plate itself, although very considerable, is not the object most covetable to this "Triton among the minnows." The sale of eggs for incubation and ready disposal of surplus stock are the remunerative objects of his more especial regard, and none but those well conversant with the subject would accredit the final pecuniary aggregate of such sales.

It has been urged that the small amateur who keeps but a variety or two has even increased chances of success over his more wealthy rival; that his attention and means being undivided, he can manage more carefully the few under his especial charge, and thus bring them into the wide field of competition with better hopes of final success. This statement is quite feasible so far as exposed; but the facts are only half told. The peculiar position of the competitors is quite opposed. The amateur of really limited capital most probably breeds all his fowls; the exhibitor for general exhibition cups, on the contrary, always proves himself a constant buyer of such pens as defeat his prospects. They are no incubus on his finances if unsold, even if their position is finally snatched from them by future more

successful poultry. A really noted prize-taker's position once attained, all such birds are easily convertible into money, whilst no purchaser would presume to expect that an amateur would knowingly dispose of those specimens that would with certitude rule the roast on all future occasions. I admit that liberal outlay ought to reap a corresponding reward; but still I feel convinced that the emulation of what are termed the "little men" is much damped when they anticipate a trial of strength with those notorious for walking away with premiums wholesale. Hence their tendency to limit the amount of entries, which, on the contrary, should always be one most desirable consideration with Committees if it can be generally attained. It is the *many* that suit *their* interests, not the *few*. I am myself confident that the eventual perpetuity of any exhibition depends very greatly, if not altogether, on the wide dissemination of the premiums throughout the competitors; for if any one man, or any small body of individuals, are continually winning the great bulk of the premiums, the less successful will naturally avoid a contest so unequal.

I also maintain that ALL varieties of poultry, *be they what they may*, if perfect specimens of their kind, ought to compete on terms of the most exact equality for these premiums; for they among their natural fellows maintain their well-earned superiority. I contend they should, at least, be permitted to enjoy an immunity from discarded position in those contests, therefore, where all are *invited* to enter the lists, as contesting without any reference to breed or variety. My conviction is this—let all and every amateur keep just what description of fowls his own fancy dictates. If they are really superior, purely-bred birds of their class let them stand on terms of the most direct equality with those of all other amateurs, be they what they may; and if Poultry Committees think well to proffer such varieties of rewards pray let them enjoy them as "their right," without prejudice or incumbrance through the individual caprice of the arbitrator or arbitrators. This was the reason of my first suggesting the principle of marks as the rule to finally award prizes for "best general collections." It has naturally its opponents, principally among those parties who have made excessive outlay in the original purchase of stock that may be the ruling "fancy" of the day, or those tradesmen who have realised no mean amount of profit from the sale of such. However disputed, it is notorious that salesmen obtain incredible advantages by "puffing into notoriety" some *particular* description of stock, at least for a time; then the "fashion changes," and a substitute is brought out to suit the same occult purposes. The more difficult the attainment of the description of poultry, the greater amount of profit do they return.

The differences between prices of *purchase* and *sale* few would imagine but most amateurs who have tested it when in communication with parties who follow it as a daily occupation. The commoner varieties of poultry are not coveted as the medium for the realisation of extreme profits, for the simple reason, "they will not pay" the dealer for their sustenance during the time, if at all protracted, they remain "unsold" on his hands. This induces a disposition to discountenance them in favour of those kinds which yield better and more lucrative returns in such cases as when they may compete together, even where the despised fowls are really praiseworthy for egg production or table purposes, their only objection being that they are admittedly somewhat general. But the very fact of being numerous undeniably proves that the winning fowls must have attained unusual excellence in their respective classes; for it cannot be denied that where the competition is the most extended the probabilities are that the successful fowls have certainly possessed a very much closer approach to perfection than where the test of superiority was confined to a class containing only a few pens. If, then, they are excellent of their kind they ought, certainly, to be permitted to enjoy an equality of opportunity when competing for cups for general collections, and I am not at all prepared to admit that because a Poultry Judge has a predilection for any especial variety, another kind, equally truly bred, should be discarded as comparatively unworthy of exalted position, because caprice on his part dictates against them, whilst the credit of winning against the many is incomparably more difficult, and consequently

praiseworthy, than among the few. I cannot subscribe to a system that has for its only tendency the introduction and subsequent exaltation of wealthy purchasers; they no doubt suit the interests of those from whom they purchase, but they as undoubtedly militate against the welfare of the poultry community at large, and I maintain that private interests must give way to public weal. The highest bidder ought not to obtain supremacy at the expense of equally meritorious, though more humbly situated, aspirants to public distinctions; I mean there should not necessarily be any undue advantage of the wealthy amateur over his poorer yet equally laudable competitor. In short, if plate prizes of unusual value are to be continuously secured by a very select few of our amateurs, as being the certain result of unfettered outlay, can the amateur of humble means hope to aspire to such distinctions? These, then, were my sole and avowed reasons for suggesting the principle of marks, to determine, without exception, in all such cases, plate prizes for monster collections, as they tether the power of these perfect Goliaths against little poultry exhibitors. The plan, where adopted and really carried out, has INVARIABLY succeeded, as witness the Exhibitions of Bridgnorth, Southwell, and the Notts Central; but confessedly, where it was originally agreed to at the onset, and afterwards abandoned when the result did not show tide-favour to particular parties, causing ill feeling and severances. This is in no way surprising; for, however unpalatable the suggestion, to compromise principle, if proving adverse to friendly associations, ought never to be countenanced even where attempted, as consequent disrapture and exposure must inevitably ensue.

Where marks, or points, as they are sometimes called, are strictly adhered to, proportioning the points in the aggregate according to the already awarded prizes in the general classes, the caprice (for I will not avail myself of any more expressive term) of the arbitrators avails not. Their previous decisions determine arithmetically who is eventually to carry away this most valued premium. It is quite useless to deny that all Poultry Judges who happen to frequently adjudicate must inevitably know well the individuality of many of the principal prize birds; it is impossible it should be otherwise. If, then, they are permitted to determine, without any reference or respect whatever to their just appointed decisions, the future ownership of rewards so valuable, depending, as they ought, on "collections," not single pens, tests will naturally, by the unsuccessful, be applied very closely to their conclusions; their propriety frequently disputed and given in contrariety to decisions arrived at only a few hours previously; they may urge their complaint with manifest reason and justice also. I contend, therefore, let every prize pen, according to its position on the general prize-list, compete with equal hope of successful issue, whatever the variety. If easily-obtained breeds succeed the chances are that they will be only the more sought after and encouraged; but certainly, if Judges are permitted to appoint position to fowls solely for costing great outlay, the multitude of exhibitors, who cannot afford to pay for principal plate premiums, are precluded entirely from winning—a dogma I, for one, must strenuously oppose.

—EDWARD HEWITT, *Eden Cottage, Sparkbrook, Birmingham.*

POULTRY SHOWING IN AUSTRALIA.

We are very glad to find that the improvement of the breeds of domestic fowls has become an object of interest on the other side of our globe, and that even Agricultural Societies are offering premiums there to encourage such improvements. Their goings on at present are rather rough, but the spirit of progress is advancing in that direction, and to have taken the first step is satisfactory. Our readers will be amused, as we were, with the following, taken from the *Sydney Morning Herald's* report of the proceedings at the Illawarra Agricultural Society's Annual Show in February last:—

"POULTRY.—We have witnessed some eight or nine Agricultural Shows in this district, but we can with safety say that none have come up to the present in the quality of the poultry. More we might have seen, but certainly none to equal those exhibited on Thursday in quality. The only

regret we had when looking at them was, that the place was not better adapted to show them. *It is not certainly the best way to exhibit their plumage or form to tie a couple together and lay them on the floor.* They ought to have pens sufficiently large for them to move about with freedom."

Our Australian friends are nearer than we are to Java and Borneo, in the interior of one or both of which islands it has been stated fowls are existing of a size far larger than any known at present in Europe. We wish that our said friends would institute inquiries about them.

DUCKWING GAME BANTAMS.

I HAVE long been a warm supporter and fancier of Game fowls, and often had to fight hard to maintain for them that position amongst the fancy they so richly and deservedly merit. But another race appears to be brought before our notice, as yet a comparatively hidden one. I allude to the "Duckwing Game Bantams," which I am sorry to say "DANDY" passes over so very summarily. "DANDY" briefly tells us they are the *facsimile* of the Duckwing Game, and that they are scarce and command a high price. Many are aware of this, yet, in spite of the price, would, I believe, be glad to purchase them. Could or would "DANDY," or any of your correspondents, inform me how they are to be bred, and of their original stock? This class is yet, in my humble opinion, to form a great attraction to our shows, and will ere long carry the laurels from some of their diminutive neighbours who have so long reigned triumphant.—MERRY LEGS.

PRESCOT POULTRY SHOW.

THE Fourth Annual Exhibition of Poultry will take place at Prescott on Thursday, July 9th. Eight Silver Cups of the full value of five guineas each will be awarded, besides money prizes. An additional Silver Cup of the value of five guineas will be given by the Secretary for the best Game Cock of any variety. Entries must be made on or before Thursday, June 25th, and all birds must be at the place of exhibition before 7 p.m. on the 8th of July. Every care will be taken of the birds, and they will be forwarded home immediately on the close of the Show, and the prizes promptly paid.

Any information required, together with schedules and forms of entry, can be obtained from J. F. OLLARD, Esq., *Hon. Sec.*

OUR LETTER BOX.

UNPROLIFIC EGGS (*T. W. Wrench*).—Sixteen chickens out of 120 eggs is indeed a small return; but how can we tell the cause without knowing full particulars? Too many hens in proportion to the cocks, improper sitting places, old or injured eggs, and many other circumstances may be the cause. Shutting the sitting hens up in boxes and feeding them in the boxes is a cruel mode of treating the hens, which ought to cause failure if it does not. When a hen sits herself she makes her nest upon the ground, or some other place where damp can get to the eggs, and comes off daily to refresh herself and the eggs too.

CHILLED EGGS OF GOLDEN PHEASANT (*A Constant Subscriber*).—Eggs sat upon for five days and then left for twenty-four hours will not be spoilt probably.

PARROTS, &c., BITING OFF THEIR FEATHERS (*H. M. B.*).—When "an unlimited supply of water" to the bird was recommended as a cure for this habit, such a supply of water was intended as the bird can bathe in.

ARTIFICIAL HATCHING (*J. L.*).—There is no difficulty in hatching chickens by either Cantello's or Minasi's apparatus. They might be had of any size, but we forget the price. We speak in the past tense because we know not where these most unprofitable incubators are now to be obtained.

NATIONAL COLUMBARIAN CLUB.—The secretary is Mr. Wrench Towse, and not Twose, as stated in our last.

SPANISH COCK DISEASE (*An Essex Amateur*).—Your bird seems to have the roup. The following is the treatment recommended in our manual, "Poultry Book for the Many," just published, price 6d., and which you will not repent buying:—"Wash the head daily, or twice daily, with tepid water. Sulphate of copper, one grain, daily, mixed in oatmeal mashed with ale. Give plenty of green food. Separate the fowl from all others; the disease is contagious. If not better within a week kill the fowl."

WEEKLY CALENDAR.

D M	D W	MAY 26—JUNE 1, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
26	TU	Pellitory (Parietaria).	29.887—29.777	70—48	S.W.	02	56 a. 3	58 a. 7	11 51	3	3 15	146
27	W	KING OF HANOVER B. 1819.	29.801—29.626	70—47	..	63	55	59	morn.	4	3 9	147
28	TH	Mistletoe (Viscum album).	29.708—29.583	69—40	..	41	54	VIII	0 20	5	3 2	148
29	F	KING CHAS. II. REST., 1660.	30.005—29.853	60—36	N.W.	—	53	1	0 42	6	2 54	149
30	S	Toadgrass (Buffonia).	30.130—30.084	57—41	N.E.	—	52	2	0 56	7	2 46	150
31	SUN	WHIT SUNDAY.	29.880—29.700	51—47	N.	22	51	3	1 9	8	2 38	151
1	M	WHIT MONDAY.	29.738—29.690	56—33	W.	—	50	5	1 19	9	2 29	152

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 67.1°, and 44.9°, respectively. The greatest heat, 86°, occurred on the 29th, in 1847; and the lowest cold, 29°, on the 25th, in 1849. During the period 110 days were fine, and on 86 rain fell.

USEFUL GARDEN GRASSES.

CYNOSU'RUS CRISTA'TUS.

(CRESTED DOG'S-TAIL.)



THIS is a perennial Grass, and must be one of the most useful of plants, for it is one of the most widely diffused, and it is gifted with more than ordinary powers to secure its propagation. Its stems, or culms, are so wiry and hard that the cow and the sheep abstain from biting them; consequently no grass has its seed so unfailingly ripened. Also, when it is growing under trees, so that there a sufficiency of heat and light does not reach the plant so as to enable it to ripen its seed, then it becomes viviparous; that is, it bears offsets instead of seeds.

The roots are tufted, with long, unbranched fibres. Stems several, varying in height from twelve to eighteen inches, unbranched, very stiff, hard, round, smooth, with

three or four joints, most leafy in the lower part, remaining brown, withered, and wiry with their dry, empty spikes through the latter part of summer. Leaves bright green, short, narrow, flat, smooth on both sides, edge scarcely rough, with long, smooth, streaked sheaths. Abrupt or ragged-ended and rather short stipules. The head, or spike of flowers, about two inches long, erect, stiff, straight and narrow, green, florets all turning to one side, sometimes purple, with a wavy, rough stalk (rachis). Floral leaves divided deeply into awl-shaped segments. Husks, or glumes, usually containing three florets. Smaller valve of the blossom ending in two points; larger valve ending in a short awn. Anthers prominent, pendulous, purple. Stigmas white, feathered. Seed longish, oval, pointed, reddish yellow, covered with the valves of the corolla. It belongs to Triandria Digynia of the Linnæan classification.

This Grass, as previously stated, is an excellent lawn Grass, its herbage being fine, good-coloured, lasting, and enduring drought well even on the driest soils. In some places it is called *Bent Grass*, and in Scotland *Windlestraw Grass*, both names alluding to its enduring flower-stems. These stems yield a material for the manufacture of Leghorn bonnets and hats, superior even to the straw from which they are made in Italy. The stems should be gathered whilst green, about the time of the flowers opening, as they are then tougher and more solid than when nearer to withering. The processes of splitting, scalding, and bleaching are now well understood. So great was the demand at one time for the "English Leghorns," that we knew of more than one village where the women and children found full work in preparing the plait, and in the Orkney Islands more than a thousand persons were similarly employed. We fear that the demand for this very elegant, durable, and native material has almost ceased.

This is the *Gramen cristatum*, or Crested Grass, of Ray, Bauhin, and others of the old botanical writers.

THERE can be no doubt but that the HORTICULTURAL SOCIETY has taken a step in the right direction, and that the principles upon which the Council seem to base their course are sound and correct. We never could see that it would be otherwise, and all the time that a contemporary was "moving heaven and earth" to swamp the Society, to throw discredit, in every

possible shape, upon the crazy old ladder by which he himself had risen, we, who had no personal interest in the matter, placed ourselves in the breach, and stoutly (and, we trust, successfully) defended the institution from the worst of all enemies—those of its own household.

When, on the one hand, we think of the abyss into which the Society had fallen, and the paltry pleas to abolish the garden and transfer the Society to some snug apartment in London, there to consist of a coterie of fogies and their serving-man, and, on the other, to the vigorous vitality which is now evident in every department, we are filled with pity towards those who, assuming to themselves a dictatorial and censorial importance, indignantly spurned every suggestion which might have been of benefit, and treated every well-meant action with a how-dare-you scowl which made nervous men actually afraid of the censor's shadow. Happily those days are gone by, and a brighter has dawned. The arrangements which are being made for the great Show at Chiswick Gardens on the 3rd and 4th of June, and the ready and hearty response which the country has made to the circular of the Council, clearly show that the horticultural spirit of England is not yet exhausted. We hear that already the entries for the implements and mechanical departments have been very great. Among them we may note—24 Boilers, 28 Mowing Machines, 35 Pumps, 12 Garden Engines, 12 Syringes, 8 Transplanting Machines, 6 Greenhouse Conservatories, 6 Models of Conservatories, 18 Tents, and 6 Bee-Hives. In the class Objects of Decoration there are already twenty-four exhibitors, five of whom are from Scotland, and five from Paris. Now, here will be a study worthy of the great Exhibition of 1851. But is this mass of information brought together from the four winds to be dispersed again after a couple of days? We hope not. It is impossible for any one to do justice to such an accumulation of matters in the time. The first day, of course, everybody looks at the flowers, the company exchanges "How do you do?" with friends, chats, and so forth, and there is no time for anything else; old friends meeting on such occasions after long intervals must talk a little over old times. We see no reason why it should not last for a week at least, and let the Monday after the opening be a *shilling day*. How many young gardeners there are who will take advantage of such an opportunity of improving themselves, and of becoming better gardeners! And if they have the opportunity of a shilling admission on the Monday many of them will take a return ticket on the Saturday from distant parts, and return on the Monday evening. These are matters we would advise the Council to consider. It has been found from experience that a liberal act has generally proved a profitable one, particularly in such cases as these. We always say, "look to the million."

There is another matter we would impress on the notice of the Council, and that is with regard to arrangements for the *supply of refreshments*. We do not

desire to see a return to the old practice of champagne *déjeuners*, but we do insist that something more substantial than a lemon ice and a sponge-cake should be provided. Many of the visitors at these Exhibitions come long distances, breakfast early, and have no time after arrival in town to obtain any refreshment. Townspeople run down from their places of business and their offices without a luncheon, and must either starve till six or seven o'clock, or *must* go into some of those roadside houses at Turnham Green to be jostled by *plush and powder*, and fumigated by *beer and 'bacco*. Now, we hold the Council ought to offer to some respectable caterer the supply of refreshments, for which he shall pay a certain sum for the privilege; and let the Council stipulate that no intoxicating drinks—we mean ardent spirits—be permitted. But do let us have a cut of cold beef, a wing of a fowl, or a slice of ham, or anything else substantial, as one gets at the Crystal Palace, and for any sake do not drive us into those poking places in the neighbourhood where you can get nothing in comfort. Such a convenience might easily be provided in some retired spot, and we feel assured that there are many who will heartily thank the Council for any such arrangement, provided always that there is a printed tariff of charges, and "no fees to the waiters."

POTTING PROCESSES, THEIR PAST HISTORY AND MODERN IMPROVEMENTS.

ALTHOUGH the putting a plant in a pot appears at first sight a very simple process, and, indeed, is so with regard to plants of no very particular value, yet, to many plants or families of plants, it is doubtless of the first importance. Of what use would it be providing the best of garden structures, securing a sweet and wholesome atmosphere, &c., if our most delicate and choice plants were badly potted, and their soils in consequence become sour and stagnant? And, to ask further, what was it in former days that caused garden-pots in greenhouses to be so liable to a coating of green scum, and the plants so particularly liable to the depredations of insects? Bad soils and bad pottings, doubtless, as predisposing causes.

One of the first improvements that took place in modern potting processes was the use of coarse and turfy materials instead of the finely-riddled composts of former days. About the period of this advance people began to turn their attention to the make of garden-pots also, and it was speedily discovered that the pots which had been so long in use were anything but faultless. Thorough drainage as a principle in potting was speedily a growing question, and received the utmost consideration from practical men in all quarters who were well up in their profession.

These great improvements, doubtless, received an extra impetus through the introduction of so many choice plants, many of which, especially some of the finer-rooted, commonly called New Holland plants, showed evident signs that they would not thrive under the old system. The commencement of the exhibition era, also, much facilitated progress of the kind, and now it may be said that British gardeners can grow, in the very highest perfection of which it is capable, almost every plant placed in their hands, from whatever clime or under whatever conditions in its own locality.

The first thing I would direct attention to is two modes of potting quite distinct. I do not say that there are but two ways, but, for the sake of simplicity in the affair, we may at once reduce them to two modes: all others are, in the main, modifications of them. One may be characterised as loose potting, the other as firm or close potting. The loose mode is applicable, in the main, to annuals and soft-wooded plants, and, I may add, to most plants of what may be called ephemeral character. The latter class are required to make their growth as speedily as possible, in conformity with their habits and the services they are qualified to render; the former class requires durability in the texture of the soil rather than rapid excitement.

Now, plants of these two classes ought to be potted very differently; and, in order to illustrate the matter, let us take two plants, a Balsam and a Heath: these two everybody is familiar with. In potting the former a compost is generally used, and this, in the ordinary language of gardeners, means a mixture. When such is used it becomes necessary that, in order to have it uniformly mixed, the soil be passed through a riddle or sieve. This compost is filled in lightly round the Balsam plant, and a shake or two, with a very slight pressure, perhaps, in filling, makes all right; but in shifting a Heath this process will not answer so well by any means. Here the skilful cultivator, after procuring his sandy and fibrous heath soil in a dryish condition, breaks it up into lumpy fragments, and these he places around the ball, packing them somewhat tightly, some even thrusting fragments of stones amongst the turfy material. As for the finer particles which fall out in the handling, he uses little of this but to coat the surface over.

As to watering newly-potted or shifted plants, I may just show that this differs as much with these two classes as the potting or shifting process. The Balsam alluded to would, in most cases, benefit by a good watering with a fine-rosed pot; but the Heath would require some extra caution. Most of our hard-wooded plants when repotted require that their ball of earth should be in a moist condition—not wet, but equally moist throughout. This secured, and the potting performed somewhat similarly to the Heath before alluded to, light waterings, not over frequent, with the spout of the pot will prove most suitable. When I pot Camellias I always make a point of so dressing up and pressing the surface of the new soil in the pot as to leave the stem in a small concavity. This induces the water when applied to penetrate the old ball, a thing I hold to be of much importance until the new soil is filled with roots, when the surface may be made perfectly level. Many a valuable hard-wooded plant is ruined by loose potting, the water in such cases rushing through the loose soil to the entire desertion of the old ball, the loose soil being speedily converted into a kind of mud.

I have before alluded to the use of very fibrous soil as one of the chief improvements in modern potting; let me here caution the young beginner against potting with wet soil. If soil in a wet state must be used, then all my advice about firm potting falls to the ground. My practice is this:—Turfy or fibrous loam, having lain about six months in the compost yard, is chopped down when very dry with a sharp spade, leaving lumps the size of a large potato in it. This being well handled a considerable proportion of the more loose soil falls away, and this is put aside for ordinary purposes. The turfy material is now housed, no riddle being used; and this will lie for months in the potting-shed if in a body, and prove always in excellent order for potting.

Heath soil, peat, &c., are served in a similar way; and such materials in such a condition are qualified, either

singly or in composts, to provide for every need in the plant way.

I must now recur to drainage matters. Here, again, practical men make a difference. Annuals, and many soft-wooded plants which soon come to perfection, require a very moderate amount of ceremony of this kind. A crock carefully placed over the hole, and over that a layer of the coarser materials of the compost, will generally suffice, although I usually throw a little charred material over the crock, or a piece of moss. When, however, we take the more delicate of the hard-wooded class, specimens which have to remain a long time in their pots, and, indeed, plants of various kinds which are known to be somewhat shy rooters, the case is very different. Even in Camellia potting, for my part, I deem it expedient to be very particular; and strange it is that some of our continental neighbours think and act so differently, for I have lately read that they are in the habit of simply thrusting a lump of turfy peat in the bottom of the pot, and also pot their Camellias almost entirely in peat. But it must be remembered that to grow young stock into a smart, saleable appearance, and to sustain large specimens in high blooming condition for many years, are two very different affairs. There can be little doubt that much of the failure so frequently complained of in Camellias, when in the hands of amateurs and small cultivators, arises in no small degree from the mode of potting them. Razors made to sell and razors made to cut are two very different things. I find, also, that where liquid manure is frequently used there is the greater need of sound drainage, as, under the best of circumstances, it has a tendency to close the interstices of the soil, especially if fine soil be used. I, however, bid utter defiance to this tendency by the use of very turfy and lumpy soil.

After all the care we can use in potting processes we may remember that it lies in the power of an ignorant and heedless waterer to nullify all our efforts in a very few weeks. This is a most serious consideration. The worst of it is that we scarcely know how to offer a rule to those who are careless or ignorant. A thoughtless person can never be relied on for watering; but the term "thoughtless" will scarcely express what I mean, for we have no cases of thorough mental inanition in those who labour with their hands. What I really mean is this—that no person can water plants well unless he actually cares for their welfare. Absence of mind is, therefore, here an unfortunate affair.

One piece of advice may here be given to the uninformed. When plants are established in their pots, and require water, let them have a thorough watering, unless some special reason exists for dealing otherwise with them. Plants growing fast or blossoming heavily generally require more water than at other times; and plants sinking into a state of comparative rest, and possibly shedding a portion of their foliage, bulbs, &c., require a very moderate amount of moisture; indeed, in many cases, none at all.

One other great feature in modern plant culture is the constant war that is sustained against the insect enemies of plants. On this, however, it is no part of my present purpose to dwell; I merely point to it as dividing the honours attached to the high success of these times with good potting and watering. But I would observe that there is such a thing as predisposition in plants or families of plants to insects, and that one of the most fertile causes of this predisposition may be found in abuse of the root action through bad soils, bad potting, and bad watering.

I would here beg the earnest attention of all inexperienced plant cultivators to a close consideration of the before-named principles, and suggest to them that the general health of plants is more dependent on the soil, and, in consequence, the root action, than upon

any precise amount of heat, or, indeed, any of those little collateral matters which are, as it were, subsidiary to high culture, and recommend that a due attention be paid to the potting-shed and the conservation of soils.

R. ERRINGTON.

SPRING FLOWERS.

THIS spring every bed and border in the Experimental Garden, all the vases, the rustic baskets, the Ivy baskets, and the front of the shrubberies, where they could be seen from the windows, were filled with spring flowers, every one of which was planted or transplanted since February, and all of them will be removed ere long to make room for the summer flowers. The last of them will be the rare *double Crowsfoot*, the very finest thing that ever was planted for a mass, and for the revival of which we are indebted to the Honourable Lady Cust, who met with it somewhere about North Wales, and had it brought into the garden at Masleuch Castle, below Chester, whence her ladyship sent it to one of the royal gardens, where I saw it last May, and from which I had runners of it in October. They were then planted in a rich piece of ground in the kitchen garden, and in February were planted out in the vases and in two small beds with Wallflowers, where they now carpet the bottom, and seem all the better for being partially shaded by the "Walls." We did not pull up the Wallflowers for fear of disturbing these darlings; but as soon as they were over, or nearly so, they were cut off close to the ground, which is the best way to dispose of them whenever they are mixed with other spring plants, as in this instance. I had my doubts all along about the runners of the *Crowsfoot* flowering the first season, but now they are blooming and throwing up for bloom beautifully; not, however, so strongly or so thickly as the old plants which produced them. Still we shall have a good "tasting" of them the first year, and after that we shall hold up our heads as high as any of the royal gardeners themselves.

All the old gardens about Surbiton are well supplied with *Aubrietia purpurea* in patches of from six to six-and-twenty inches across, and it looks as if this was its native place. It is the finest of our spring flowers to hang down from the edges of a rustic basket, and that is the way we grow it. This is about the best time to make cuttings of it for a stock for next year, and that is the best way to increase it, as it does not part very well at the roots, neither does it like to be often disturbed, and it is a most difficult thing to establish where the soil is not quite suitable for it. Cuttings of it will root in heat or cold.

The golden-variegated Ground Ivy (*Glechoma hederacea variegata*) is another most beautiful plant to hang down from the edges of a basket in the spring alternately with the *Aubrietia*, as we have it just now; and we hardly know which to admire most, the golden streamers of the Ground Ivy without flowers, or the profusion of violet or light bluish purple flowers of *Aubrietia*. In the spring the golden colour of the variegated Ground Ivy is intensely rich, but in summer it loses much of that, and is then not so likely to catch the eye. Hence the reason why the world is not full of it; therefore book it for a spring flower, and say no more about it till this time next year.

Who could sleep half the time without a long row of *Eschscholtzia* after once seeing it that way? Ours last year was, if anything, too much of a good thing. The border was new and newly trenched, and, being destined for a collection of annuals, a good heavy dressing of rotten dung was worked in. The grand secret for having a super-excellent show of annuals is to sow them *thickly*; to thin them out in time; to give them ample room

plant from plant, and still more room at the roots by trenching or very deep stirring with a three or four-pronged fork if they are among herbaceous plants, which it would be daft to disturb with a spade; and to have the contents of some muck pie or another worked in as deep as the fork can go, unless one can get the real stable manure from an old hotbed, that would cut down like fresh butter.

I very seldom cover annual seeds at all, and I know it is wrong to do so after the middle of April—very wrong indeed. There is no gardener in the kingdom who is fonder of annuals, or who has used more of them "all his life" than I have, and I shall never believe that a garden is half furnished without lots and lots of them; therefore I ought to know all about them, and I say distinctly that their seeds ought not to be covered, in the sense in which we understand covering seeds. When *light soil* is well dug by a handy workman, who will level the surface and break every clod as he goes, it is just in the best possible condition to sow the bulk of annuals; then sow on the surface, and a light stroke or two with a fine rake buries or covers them quite deep enough—I more often do it with my fingers. Sweet Peas and Lupines, with Nasturtiums and a few more such, are covered just as deep as garden Peas for the kitchen—no more or less; and of course shallow rows or drills are made for them on purpose.

The maddest thing a man ever did, or the most foolish thing a woman ever thought of, was to sow annuals *in spring* on poor land, or on rich soil only scratched on the surface as an apology for digging, allowing them to stand as thickly as they came up, and then expecting them to be worth looking at. Always sow thickly to guard against failures, and if you sow before the 10th of April let the rake go a little deeper, so that every seed is covered, and *no more*. The reason for this is, that a few warm days and dewy nights may stimulate the seeds to sprout prematurely, when many of the seedlings will not bear the frost; but, as was said in another column lately, spring frost does no harm to any one seed I know as long as it is merely a seed, an extremely curious fact which I have seen proved, to decide a bet, as long ago as 1822—the year before or the year after, I forget which, but the year I speak of was the next to the mildest winter I recollect. About that winter the Currant bushes were in full bloom by the middle of February north of Inverness, in Lord Lovat's garden at Beaufort Castle. There was an idea prevalent at that period that exotic plants could be acclimatised by successively rearing them from seeds in a succession of latitudes; as, for instance, seeds from Algiers to be sown in the south of Italy, the seeds saved from that crop to be sown a few degrees northward, and so on to the north of Scotland. Such as opposed this doctrine in the north were called Jacobites, and one of these Jacobites laid a bet that he could prove that all seeds by an original decree could withstand any degree of cold incident to this globe, provided they were perfectly dry at the approach of the cold, and his proof was with packets of Melon and Cucumber seeds, which were exposed to the frost of the winter succeeding the mild one. Every one of the seeds grew, and whether there was any trick in the thing I dinna ken; but it would be very well worth while to try that experiment over again. I can vouch for one thing which happened through my own neglect: seeds from Cumana, which Humboldt says is the hottest place on the face of this globe, were left "overnight" in a potting-shed where water was iced very hard, and yet most of them vegetated, although they must have endured several degrees of frost.

All this refers only to spring-sown annuals, and the very opposite treatment is necessary for those that are sown in August and September; the ground for them can hardly be too poor, and if it is stirred two inches

deep that is better than digging it. The reasons for the difference are as plain as they are simple. The average time from the sprouting of the seeds in the spring till the plants are in bloom is just seven weeks, and at the end of the seven weeks is the most oppressive period for plants in the whole season; therefore, unless the roots can penetrate rapidly into a rich, stimulating pasture, the flowers will not hold on long enough to make it worth while growing them; and those annuals which are sown in August have from six to seven months between the sprouting and the flowering seasons, and cold is not nearly so bad for them as extra heat. Having very scant pasture for the roots, they grow slowly, which is the reason why they stand the frost better than more succulent plants, which spring up on deep-wrought soil; and it is the same reason why self-sown seeds in the shrubbery are more sure to be depended on than those sown carefully in the kitchen garden, which brings us round to the long row of *Eschscholtzia* which was too much for our border last year, and which row received a very different treatment this spring. Eighteen inches from the side of the walk have been left undug for it the whole way, and half an inch of fresh soil from the digging of the inner part of the border was scattered over the space. The seeds of the *Eschscholtzia* came up through this as thickly as they always do, and being a perennial, but thus treated as an autumn-sown annual, its fibreless, fleshy roots cannot reach deep enough to escape the heat and drought of summer, and that will make it less free in growth and more flowery. There is not a flower in the garden which is more misused than the *Eschscholtzia*, and certainly none is more easy to manage. It is allowed to rise from self-sown seed till it is a weed as it were, and any plant is a weed out of its proper place. But there are three ways by which it looks better than any other way—as a long row by the side of a walk or carriage-drive, as an edging to a large bed, and as a rock plant. For the row and edging sow early in April, and do not stir the ground more than three or four inches deep for it unless you want it to spread wide; pick off the seed-pods as fast as they come, and you will have bloom to the middle or end of September. Plant the roots of old *Eschscholtzias* high up on a rock or rockwork, and they will last for years, and rival the Stonecrop.

D. BEATON.

WINDOW GARDENING FOR SUMMER.

HAVING dwelt so much on the minutiae of management for spring, and these being applicable also to summer—which I shall suppose to extend from the middle of May to the middle or end of August—I shall merely mention some things necessary to be attended to, preferring to give a short outline of the various plants mentioned in a division by themselves.

1. *Watering* will now be required more frequently as the sun gains power, but the frequency and quantity must ever be proportioned to the wants of the plant. After June, or even the last fortnight in May, it will seldom be necessary to have water any warmer than what standing in the sun will make it. Syringings and sprinklings overhead on a warm evening will keep the plants healthy and clean.

2. *Ventilation* may now be given with more freedom. After June the plants will enjoy fresh air all night. *Calceolarias* and *Cinerarias* will be benefited not only by plenty of fresh air, but by being kept cool, by standing on damp moss, and a little shaken on the surface of the pot.

3. By the end of May many plants established in their pots will thrive better outside the window than inside, such as *Pelargoniums*—scarlet, florist, and fancy—*Calceolarias*, *Fuchsias*, &c., either standing in their pots and saucers, or, much better, placed in boxes and vases.

4. This turning out of the inmates of the window after they have been gradually inured to full sunshine and air will not only keep the plants healthy and free from insects,

but it will give you the inside of your window as a space in which to prick off and pot off some of the things I mentioned as desirable to be sown and propagated by cuttings in spring, such as dwarf *Lobelias* for the inside and outside in the one case, and *Balsams* in the other. Nothing is better for pricking off than a lady's bone or ivory bodkin, and when the seedlings are small plant them at first in little patches.

5. By this means the necessary shading will be confined chiefly to such fresh-potted plants; and, as a general rule, never forget that though shading from the sun will keep a plant longer in bloom, the constitution of the plant is always weakened by defective light.

6. Potting for the season will now, after these small things alluded to, be chiefly confined to *repotting* into larger pots *Fuchsias*, *Geraniums*, &c., that are in small pots, and want more room to carry them on into successional blooming.

7. Cleaning plants from insects must be attended to as soon as one appears; but, if comparative coolness and abundance of air and free syringing or washing are given, insects will be easily kept down.

8. Manure waterings, if given weakly—such as an ounce of guano to four gallons of water, or a small tea-cupful of soot for the same quantity, will be useful when the flower-buds appear, but given before that time it would encourage foliage too much.

9. By the middle of June the weather will be too hot for herbaceous *Calceolarias* and *Cinerarias*, and these should therefore be cut down and removed to a cool, shady place; if planted in such a cool border all the better, and they will furnish plants by division in the autumn. Such plants as *Lobelia splendens* should be brought from their winter quarters in May, and grown on with plenty of water. All the succulent tribe will now want water and full exposure to sunshine. Cuttings of *Wallflowers* and *Geraniums* to bloom early next season may be inserted in June. Almost every desirable window plant may be struck out of doors at Midsummer if planted in sandy soil, and covered with a handlight and shaded. The best substitute for a handlight is a pot with its bottom knocked out, and then a square of glass placed over where the bottom should be. Wooden boxes with neither top nor bottom would answer nearly equally well. *Chrysanthemum* cuttings may be so inserted at the end of May, or the roots be divided in June. *Acacias*, *Camellias*, *Cytisus*, *Daphne*, &c., would be better out of doors after July. Most of the *Pelargonium* family will strike freely in a sandy border in August.

ERRATA.—Page 66, first column, first line, "haseled" should be "hazeled." It is not yet a dictionary word I believe, but is used professionally to signify soil getting nice and dryish on the surface.—Page 66, second column, twentieth line from the top, and first word in the line, "flame" should be "frame or box." R. FISH.

(To be continued.)

FORMATION OF LAWNS.

It will be admitted by all that good velvety turf is one of the most ornamental objects of which dressed ground can boast; therefore any hint in the way of improving a lawn not very good is at all times acceptable, especially as there is much unsightly turf to be seen in various places, some of which might be improved by a little judicious outlay; others, by the peculiarities of the situation, cannot well be rendered good without considerable expense, but may, nevertheless, be improved. It is, therefore, best to take a survey of what is generally seen or found.

In the first place let us suppose that a sort of hungry gravel has to be covered with lawn turf. Here the predominance of stones is a great drawback, as the earth recedes from them, and leaves them standing in bold relief when the seed is sown, for we presume the case will not admit of turf being imported into it. From a soil of this sort it is prudent to rake off all the stones that can be had from the surface, and if a

covering of about an inch of good earth can be had, so much the better. On this let the grass seeds be sown at any time when it is ready, and the ground very well rolled; nature will usually do the rest. The object in removing the stones is to keep them away from the scythe, and the more fine earth placed at the top the better the quality of the grass lawn, and the less likelihood of its burning in hot summers.

A shallow soil resting on chalk is almost as unmanageable as the last, not so much from the presence of stones as from a disposition it has to produce plants inimical to a nice close-bottomed turf, the Plantain being the most annoying. Prepare for sowing as directed above. Mow as often as possible, and when Plantain and other weeds assume an unbecoming growth let boys be directed to go over the lawn, and cut each one up singly about an inch below the surface, not deeper, and put about a tea-spoonful of salt on the cut part. This will not in all cases exterminate these pests, but it kills many. The evils of these plants are the naked, raw spots seen in the lawn in winter, as they die down then. May is, perhaps, the best time to kill them. Dandelions may be subjected to a like fate, and, if necessary, Yarrow or Milfoil, Saintfoin, Chicory, and some other weeds might be extirpated in the same way.

A rich garden soil for a lawn is as bad as any to manage; not but that the grasses grow well on it, and their general luxuriance checks the production of Daisies, but then the richness of the soil encourages worms, which are very troublesome in autumn and in mild winters. The only remedy for this is to give a good coating of ashes or chalk an inch or so below the surface. A partial remedy for the time being is to give the lawn a good watering with lime water; but, as may be expected, this is not lasting in its effects.

A dry, black, peaty soil sometimes produces a nice agreeable surface, moss being predominant, and to those who like this kind of surface black peat earth might be added to other soils when it can be obtained; but the grasses it produces are hard and wiry, and were it not for the presence of moss its surface would not be agreeable.

A loose, running sand is also bad for producing a good sward, though it may be done with time and patience; but the grasses on this soil are not deep rooted, and are easily affected by dry weather, and also easily damaged by any one running or stamping about. It is, however, free from worms, and sometimes becomes mossy.

Perhaps the best description of soil for a lawn is the stiff loam or clayey soils which predominate in so many districts. This ought not to be by any means rich, as a rapid growth is not wanted in the grasses of a lawn; but, in preparing it for laying down, let the surface be as much alike in quality as possible, and do not stint the quantity of seed. A very stiff clay is no better than a very dry sand for resisting drought, as it is, in a measure, sealed up against the insertion of roots, and the surface contracting by the withdrawal of moisture, it is liable to crack, &c., to a great depth. Nevertheless, a stiff soil usually makes the best lawn.

Though other soils might be enumerated, the above are the most common ones, and, as it often happens that good turf cannot be had to cover all that is wanted, sowing good seed is the next best course. I have at various times *inoculated* naked ground by breaking up a few pieces of turf into small patches, and scattering it regularly over the ground in moist weather, and then rolling it. This quickly becomes green, but is uneven and tufty, and is some time in becoming a nice, even bottom, but when the ground is very poor it may be adopted with advantage.

Sowing seed, however, is the general way of establishing a lawn, and is, on the whole, a more precarious

crop than many garden ones we have to manage. Much depends on the season and condition of the ground at the time of sowing, and still more on the absence of small birds, who are very fond of grass and clover seeds, and destroy more than is generally supposed. A very slight raking in will protect the seeds much, or a sowing of wood ashes will render them distasteful. Rolling, however, is at all times indispensable, and it is a good practice to sow a very thin scattering of barley amongst the grass seeds, which, coming up quickly, tends to shade and protect the tender grass.

The best time to sow grass seeds is either in April or about the beginning of September. If at the latter time the seeds ought to have been the produce of the same season. Sowing plenty of them is also advised, as the little extra expense for a good lawn ought not to be denied.

One important thing should not be forgotten in the preparation of the ground: let it all have a surface of about six inches alike, for nothing looks worse than to see a lawn grow all in patches. One exception, however, may be mentioned, and that is, if there be any steep slopes facing the south or other exposed places let the earth on them be better than in the ground level, for the aspect and other causes render such places liable to burn with less sun than level places. They ought, therefore, to be of better material, and turf ought to be provided to lay there if accuracy be expected.

It is only proper here to observe that no lawn can be maintained long in good order without successive rollings, unless it be well used in walking on. Mowing alone will not secure a good bottom without that compression which the roller or foot of the pedestrian alike tend to give.

J. ROBSON.

NOTES FOR JUNE.

ALTHOUGH winter lingered in the lap of spring up to the middle of May, when that respectable person, "the oldest inhabitant," declared that such a season was but rarely seen before, nevertheless we have hopes, from the present appearance of fruit trees and vegetables, that June will be as productive as ever of Roses and of flowers.

Sowings are now to be made of *Red Beet* and early *Horn Carrots*, *Scarlet Runners*, *Dwarf Kidney Beans*, *Turnips*, *Lettuces*, *Radishes*, *Cabbages*, *Spinach*, and *Endive* for the main crop, and *Cauliflowers*.

All vacant ground to be manured, trenched, or dug in dry weather, that advantage may be taken of showery weather to plant out the principal crops of *Broccoli*, *Brussels Sprouts*, *Greens* of sorts, *Savoys*, *Cabbages*, and *Celery*. *Tomatoes*, *Cucumbers*, *Vegetable Marrows*, *Celery*, and all such things as have been recently planted out to be carefully supplied with water, and occasionally with liquid manure in dry weather, not in small quantities often, but a good soaking once or twice a week—what is called *puddling*; that is, dipping the roots of Cabbages and all other such vegetables, before transplanting them, in a puddle of clay of the consistence of thin mortar, will assist in protecting them from the injurious effects of dry weather. When vegetables are in active growth under the solidifying influence of strong solar light and heat is the time to apply stimulating manures with good effect; and about one pound of salt to a square yard of *Asparagus* or *Sea-kale* will supply these vegetables with an ingredient that abounds in their native localities. We have also, at this season, used liquid manure from horse-dung on *Asparagus beds* with the best results.

We would specially direct attention to the crops that are growing on ground which has been well trenched and pulverised as directed in former notes, that the rapidity and vigour of their growth may convince the apathetic of its superiority at all seasons to single-spit digging. *Scarlet Runners* produce more abundantly when they are staked and allowed to grow five or six, or even more feet high; but where high stakes are not easily procured, and no simple

contrivance can be adopted to allow them space to expand themselves trained on strands of twine against walls, fences, or old buildings, by pinching off the leaders at every third or fourth joint they are kept dwarf and bear pretty well.

If the weather is dry, liberal waterings to be given to *Strawberry* plantations to increase the size of the fruit, and a mulching of clean straw or short grass to prevent rapid evaporation, and the fruit from being splashed with dirt by heavy showers of rain.

Wall trees must be attended to as directed in former notes, that no more wood may be allowed to encumber the trees than will bear fruit next year; the shoots to be laid in carefully without a bruise to produce gum or canker. The young shoots of *Fig* trees to be stopped when they have made four or five joints, to obtain stocky and fruitful wood for next year. To obtain well-ripened wood in due season, and to increase the size and quality of the fruit of *Gooseberry* and *Currant* trees, it is advisable now to stop back some, and to cut away all superfluous shoots; also to remove all superfluous shoots or suckers of *Raspberries*. The beneficial effects of a little attention to such matters now will be perceptible in the produce, and obviate the necessity of much winter pruning.

Auriculas are much injured at this season by exposure to the sun; therefore such plants as are growing in frames should be removed to a north aspect, and exposed in mild weather to the night air.

The propagation of *Carnations*, *Picotees*, and *Pinks* by pipings may now be commenced. Although there are many persons of the old school who still pertinaciously adhere to the complicated practice of striking them in a compost of many ingredients, in heat, under handlights, or in frames, the most simple and natural, which is always the most successful plan, is to take off the cuttings or pipings, to strip off a few leaves at the bottom, then to cut to a joint, and to trim off the top leaves closely. The short, stubby piping is then inserted by pressure, which more effectually excludes the air than when a dibble is used, into any light, sandy soil in a shady situation on the north side of a wall or fence. Stuck in rows as closely together as possible, they will emit roots and be fit for planting out in showery weather in a month or five weeks. Choice *Pinks* should now have their pods carefully examined from day to day, and tied with bast to prevent them from bursting. *Ranunculuses*, when the flowers begin to expand and the weather is dry, will require a good supply of water to be given in the evening between the rows, and protected like *Tulips* with canvass or any other shading material during the hot sunshining portion of the day. *Pansies* to be now propagated like the *Pinks*. The thin shoots at the base of the plant are the best for the purpose. All inferior seedlings to be discarded, and good ones retained in their places, as removal now is frequently injurious, and is sometimes the cause of their death. When the leaves of *Tulips* are withering the bulbs should be taken up and dried in an airy place; the offsets to be allowed to remain attached to the parent bulb until all are dry.

As *Ranunculuses* are very excitable and apt to make a second and damaging growth, as soon as their grass withers they should be taken up. *Dahlias* are apt to be left without stakes or ties until a high wind sweeps over and mutilates them for the season.

The greenhouse will now be gay with plants in full bloom. To prolong their beauty it is necessary to shade them from strong sun bursts or a scorching sun during the middle of the day. When seed is not required, and it is desirable, which it is with all lovers of flowers, to prolong their bloom, it may be interesting and useful to know that three pennyworth of liquid gum arabic will be sufficient for a whole houseful during the season. The liquid being in a small phial, a camel-hair pencil or small feather is dipped in the liquid, and is thus applied to the centre of the flower, where it appears like a dewdrop, and cements the petals to the base of the corolla. As the early blooms of *Camellias*, *Azaleas*, *Pelargoniums*, &c., are retained until a full succession of blooms is expanded, fine plants thickly set with bloom, and all fully expanded at the same time, are the pleasing result. *Pelargoniums* in bloom will now require plenty of air, but no cold draughts, a regular supply of liquid manure, and the destruction of insects. The early

forced varieties, when done blooming, to be cut back to two or three eyes at the bottom of each branch, to be kept rather dry until they have made fresh shoots an inch or two long, when they should be repotted into smaller-sized pots in fresh soil, removed to a cold frame, kept close for several days until they have made fresh growth, and then exposed to all the light and air possible by pushing off the lights, which will always be convenient for use and protection to the plants during heavy rains, thunder storms, or other inclement weather during the summer and autumn months, until they are returned to their winter quarters.

The flower-stems of *Cinerarias* and herbaceous *Calceolarias* done blooming, and not required for seed, to be cut down, and treated as recommended for *Cinerarias* last month. *Heaths* and *New Holland plants* should now, in accordance with the increased influence of solar light and heat, be encouraged to make their growth by frequent waterings and syringings, liberal shifts if necessary, sturdy growth by pinching back luxuriant shoots, free supply of air, and no draughts to cause a rusty or spotted and unhealthy appearance.

If *Balsams*, *Globe Amaranthuses*, *Cockscombs*, or other such annuals are grown for filling up vacant spaces in the greenhouse, they should be frequently shifted, and kept in a good brisk bottom heat near the glass. The first flowers of *Balsams* to be picked off as they appear until the plants attain a large size, when they will bloom in greater perfection. The *climbers* will now be making rapid growth, when the side-shoots should be frequently stopped to keep them at home, from rambling, and for the increase of bloom. Wherever there is space allow them to grow in festoons, which will give a natural and pleasing variety to the scene. —WILLIAM KEANE.

THE PEACH TREE.

(Continued from page 71.)

TRAINING THE PRINCIPAL BRANCHES.

THIS, to speak properly, is the first nailing which is made after the winter pruning. It consists in fastening to the wall, or trellis, all the principal branches of the tree. By this operation we give the Peach tree the regular form that it ought to present, maintaining its branches at proper distances and in a suitable position. The earlier the pruning, the more important it is to train in the branches immediately; because, should a sudden change in the temperature take place, its bad effects are not so much felt by the tree when nailed, and protected by the copings, and by straw mats in the worst aspects. It is absolutely necessary that all the wood-branches should be trained in a perfectly straight line, because the least curve might draw the sap to the shoots that may be there, and give them a disproportionate strength, and thus render them troublesome. Training in the principal branches is of greater importance on this account than on that of its giving a regular appearance to the tree. Although this operation appears very easy, it is not without its merit when well done; and sometimes we cannot do it well at the first attempt. The intelligent cultivator, who is fond of his calling, never hesitates about going over his work a second time, in order to give it the desired regularity.

This training affords an excellent opportunity of restoring the balance of strength between two wings, one of which is stronger than the other; as also between principle branches on the same wing, where the sap does not circulate equally. To attain this end it is sufficient either to nail the stronger part closely against the wall to hinder its growth, or to give greater liberty to the feeble part; so that, being more freely surrounded with air, the vigorous development of its shoots may be promoted. These two means may be employed separately or combined, according to circumstances. Sometimes we even bring the weak side forward from four to eight inches from the wall, supporting it by props placed for that purpose; and when the equilibrium is restored it is put back in its place. This method must only be adopted when there is no longer any fear of frost.

Again, in training the branches of the Peach tree, we can fasten the weak part more vertically and the strong more horizontally. The sap consequently flows with greater force

into the former, and the balance is restored. These two means may be employed at the same time on young trees; but in those which have attained their full growth it frequently happens that we cannot bring the strong part any lower, and in that case our only resource is to train the weak part more upright. The use of these various modes ought to cease as soon as a more even distribution of the sap has rendered the respective parts equal.

In order to facilitate the operation of training, and to give it the desired regularity, we fix guides on the wall, or trellis, so as to regulate thereby the position of the principal branches. These guides are taken away when the formation is complete, and the branches are then maintained in the place assigned to them.

NAILING.

The nailing consists in fastening all the branches of a Peach tree, whatever their nature may be, in the place most suitable to them. The regulation or training of the principal branches, which has just been treated on, is, properly speaking, the nailing of them.

But nailing, as I understand it, is chiefly applicable to the fruit-branches, and to the shoots as soon as their growth requires it. It will thus be perceived that we may carry on the nailing of the tree throughout the whole course of its existence; nevertheless there are two periods of the year more especially devoted to this operation, namely, when the tree is without foliage, and when it is furnished with leaves. Hence the operation is distinguished as winter nailing and summer nailing.

At Montreuil woollen shreds and nails are used in training and nailing. These shreds surround the part to be fastened without becoming so tight as to cause strangulation. For this reason neither linen nor cotton rags are employed, as they contract or expand according to the quantity of moisture they absorb; and because, from their not allowing the nails to pierce them readily, we cannot well calculate the tension which we wish to produce.

When there is a trellis we train the principal branches upon it, fastening them with osiers. The fruit branches and young shoots are tied with rushes. In gentlemen's gardens, guides, of which I have before spoken, are fixed to the trellis; and also a rod at each side of every principal branch, and parallel to its direction. The above is a convenient way of training the fruit-branches in their proper place, which could not always be done if they happened to be opposite the openings of the trellis.

Latterly some walls have been covered with trellises of iron wire. I prefer those made of wood; but if the iron ones are used guides must be employed for training the principal branches, and when they are fastened to such trellis care must be taken to wrap the wire several times round with osier, so that the branches may rest on the latter, in order to prevent their bark from being bruised and rusted by the iron.

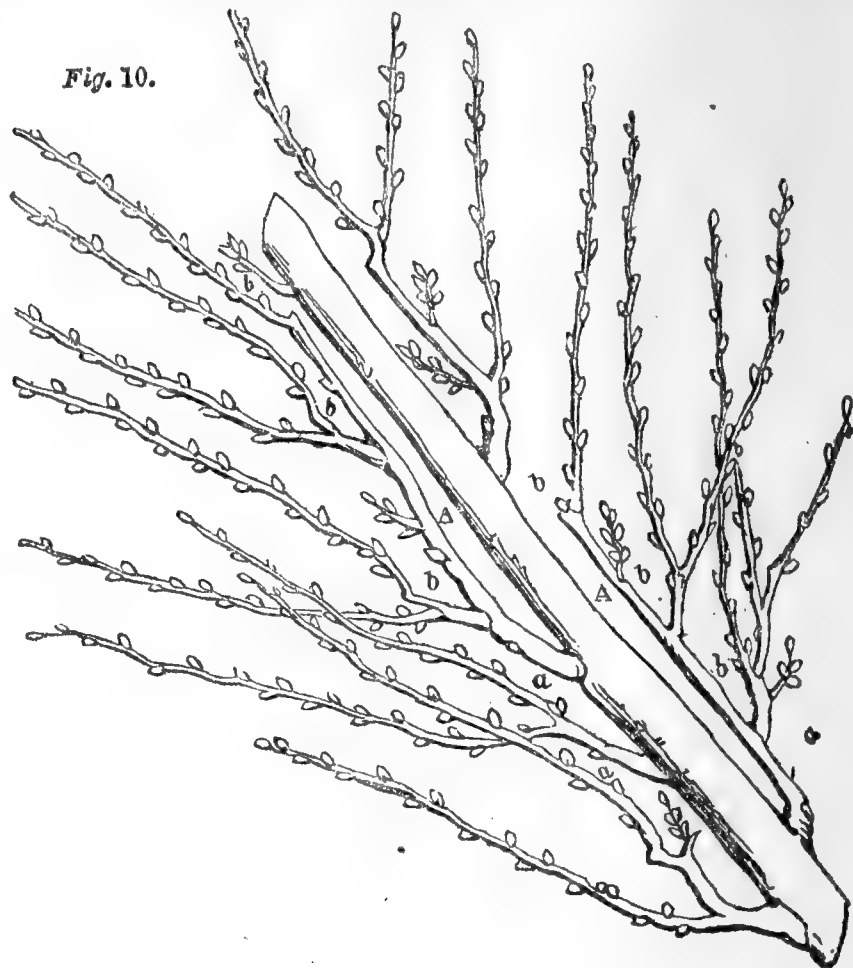
A, Winter Nailing.—This is the first operation performed after the winter pruning; and the training of the principal branches. All the fruit-branches are fastened in the place they should occupy, having due regard, at the same time, to their form and strength.

It has been shown that the growth of a wood-branch likely to become too strong is diminished by close training, and keeping it in a confined position; and that, on the contrary, it may be roused from a state of languor by giving it greater liberty. Nailing acts in the same way on the fruit-branches. The restraint that can be produced by nailing has beneficial effects chiefly on the upper sides and near the extremities, where vegetation is always more active, and which ought to be the more restrained, as it tends to increase the distance of prominent eyes from the place where the branch takes its rise. On the other hand, the branches on the lower side must be so nailed as to be in the best position to allow of a free flow of sap. The fruit-branches must be nailed near enough the principal branches to shade them with their leaves from the sun, and so that no naked spaces may exist. In short, with a few exceptions, among which are the fruit-branches that require to be constrained, all the fruit-branches ought to form, with the branch that gives rise to them, a rectilinear angle of greater or less extent.

Whatever care or foresight may be used in maintaining a

supply of fruit-branches, naked spaces may occur on principal branches, more especially on their under sides. Such cases may be remedied in the following manner:—

Fig. 10.



At *A*, Fig. 10, a naked space may be seen on the upper and under side of the branch. In order to fill it the fruit-branches *a, a*, situated on each side, and immediately beneath the naked space, are left, when pruned longer than usual, and are allowed to grow to the required extent. I suppress all the eyes in the intervals of the three shoots *b, b, b*, and I encourage the growth of the latter, in order to convert them into fruit-branches. When these are obtained, and the branches *a, a*, trained as near as possible to the principal branch that bears them, no naked space appears, and the branch is as well covered at this place as elsewhere. The three shoots *b, b, b*, are treated in the same way as the fruit-branches; and being successively replaced, like them, they produce fruit equally as well. This simple proceeding is advantageous in two ways; it prevents the branch from being naked, and it affords fruit from the three fruit-branches on each side, of which we should have been deprived if this proceeding had been neglected. Ten years ago, at Andilly, I had occasion to cover, in this way, some principal branches that were naked to a very great extent. In order to do so I allowed a young branch, trained in the above-mentioned way, to grow along the naked branches, securing it close to the latter by including both in the same fastenings. In this way the naked branches were covered, whilst the means employed were scarcely perceptible.

We now readily cover naked portions of branches by means of inarching. It is thus performed:—Part of the end of a young shoot originating below the naked part is trained along the naked branch; we raise from the latter a strip of bark as broad as the thickness of the shoot, and about an inch and a quarter in length, and we apply to this barked portion a part of the shoot sliced to half its thickness, with an eye in the middle; the inarched shoot is secured with worsted, leaving the top of the shoot free. This operation may be performed from April to August. In the following spring, early or late, according to the state of vegetation, the inarched shoot is divided from its original base immediately below where it was united to the naked branch; and no more scar is left than results from a shield-bud.

It may happen that during the winter nailing it is necessary to suppress useless eyes. Instead, however, of entering into details respecting that operation, it will be better to proceed with the subject in hand.

B, Summer Nailing.—The summer nailing consists in fastening to the wall, when needful, those young shoots made by the wood-buds subsequently to the winter pruning and nailing.

Whenever we have time we ought to follow step by step the growth of the young shoots, so as to nail them according to their strength, the place they occupy, what they are intended for, and with respect to their relation to the other young productions; but, as before said, the cultivators are too much engaged to take such minute precautions.

This being the case, the greater number of them allow the young shoots to grow promiscuously until it becomes necessary to put an end to their disorder. They then proceed to make a general summer nailing, which is usually done between the middle and end of June. As the nailing goes on, all the nails used in training the principal branches, and in the winter nailing, are pulled out, in order to use them afresh. This proceeding gives freedom to the branches, which sometimes remain in their places. It also economises nails, prevents the tree from being galled, and some of the fruit from being injured by nails pressing against them. It often happens, especially in young Peach trees, that in training them after the winter pruning a sufficient inclination cannot be given to the principal branches for fear of breaking their bark at the origin of the branch. If that be the case we unnailed the tree in order to bring these branches down to the proper place, which can be done with greater ease when they are rendered more flexible by the flow of sap. Under these circumstances the main branches are not always strong enough to support the secondary branches loaded with leaves and fruit; therefore, before completely unnailed the tree, they must be tied to each other, at a foot from the stem, with strong osiers, to prevent them from splitting. The bark of the main branches should be protected from the pressure of the osiers by a piece of cork. Even in old trees, where all the principal branches after being unnailed would remain in their right position, it is still advisable to support each of the two main branches by one or two nails and shreds. It is of course understood that all the ties of a tree on a trellis, which were made at the winter nailing, must be cut as the summer fastening proceeds.

In this operation all the young shoots which are situated towards the extremities of the principal branches, and those on the fruit-branches, are nailed or tied in the right direction, at proper distances, and without confusion. In summer nailing we always begin at the upper part of the tree, and work downwards.

The summer nailing produces the same effect on the young shoots that the winter nailing has on the fruit-branches, according as more or less freedom is allowed them. Therefore, if it is desirable to increase the growth of a young shoot, we give it greater liberty in nailing.

After having first nailed the upper parts, which are always further advanced than the lower, by reason of the natural inclination of the sap to ascend, there are cases where we leave all the lower parts at liberty during ten or twelve days, thereby increasing the strength of these parts, and equalising it with that of the upper shoots.

During the winter pruning it is sometimes necessary to remove superfluous eyes; and, during the summer nailing, pinching, disbudding, and summer pruning are requisite operations.—(*Horticultural Society's Journal*.)

EFFECT OF DAHLIAS ON BEES.

"A CORRESPONDENT says he does not know whether those who treat on the subject of bees are aware that the cultivation of the Dahlia is incompatible with the success of the bee-keeper. For many years he was very successful with his bees, having upwards of twenty hives yearly, and, of course, abundance of honey; but from the time that he commenced growing Dahlias the bees declined, and he has at last given up those useful insects altogether. They become intoxicated by feeding on that flower; many of them he found dead in the blossoms, or lying on the ground underneath, and those which got home formed little or no honey."

I have copied the above paragraph from a recent weekly newspaper, and I am so struck with the correctness of it from facts observed by myself that I venture to ask you to give the apiarian readers of THE COTTAGE GARDENER an opportunity of reading it in your present impression. I have myself had as many as fifteen hives in my garden in a sea-

son, and perhaps half a dozen Dahlias only; but for the last two or three years my hives have dwindled to three or four in a season, while my Dahlia roots number something like a *hundred*. It never occurred to me, until I read the above, that the increase of the latter caused the decrease of the former; but the facts recorded so exactly agree with what I noticed last autumn that I am quite convinced of the correctness of the statement. This discovery rather vexes me, being fond of both bees and Dahlias, and feeling loath to sacrifice one for the other. I, however, hope that a British Apiarian Society will shortly be established, and that the subject I now submit will form one of the first for its consideration.

I will this season again plant out my Dahlias, and watch carefully the effects of the flower on the bees, and communicate the result to you if you think the subject worthy of being noticed in your paper.—SENOJ.

A NOTE UPON SAXIFRAGA MUTATA.

By the late Hon. and Rev. W. HERBERT, F.H.S.



At p. 49 in the 1st No. of the Journal of the Horticultural Society I have an account of the finding of the *Saxifraga mutata* on a low mountain near Thun, and its subsequent treatment. I was obliged to my kind friend, Mons. C. Fischer, for pointing out that rare plant to me. The two plants of which I had tied up the roots in a ball of moss, placed in the mouth of a pot filled with moss, and set in a pan of water out of doors, in June, 1845, had remained untouched in that situation till both plants began to flower at the commencement of this month, July, 1846. The strongest is seventeen inches high, having a branching spike of flowers with twenty-five branches, each of which has from nine to four flowers, or under. It can thus be cultivated without any difficulty in moss, placed so that it can at all times suck up water. *Saxifraga cotyledon*, the beautiful

pyramidal Saxifrage, which is not, however, pyramidal unless tied up, but beautifully waving and almost pendulous, grows on calcareous rocks, where water oozes through their seams, and a little powdered stone has lodged on some little prominence, or has gathered round the plant itself, and generally in a northern aspect, unless the supply of water to the surface of the rock is constant. I find many plants thrive in a ball of moss with a little native soil in the centre of it.

This plant was figured exactly fifty years ago in the Botanical Magazine from a weak, faded specimen, all the flowers being coloured of the effete dark hue. It is there said that it must be protected from wet and frost. Mine has stood twelve months, and is in fine flower. The strongest plant has about twenty-five or twenty-six compound branchlets of flowers, bearing from nine flowers to about four each. The colour of the fresh flowers is yellow; of the old ones orange, not bright. I imagine that it has not been in England the last forty or fifty years. I was told in Switzerland that I had no chance of cultivating it unless I could plant it instantly. Where it grew in Switzerland the water was gushing out from the hill side.—(*Horticultural Society's Journal*.)

EARLY SPRING FLOWERS.

If you think the following hints worthy of a place in your invaluable journal they are at your service.

I have for five years grown hundreds of *Arabis grandiflora alba* for beds and edgings; also *Erica herbacea*. With the latter I hope soon to edge sixteen large beds. As a permanent edging I keep it neatly in shape by cutting it with the shears not later than the last week in April, and it flowers abundantly, and does not look unsightly, although the beds are surrounded with grass. I also grow large quantities of the two yellow *Doronicums*. *Arabis purpurea* I think is much neglected; not less so *Pulmonaria officinalis*. Of the latter I have a variegated variety which, I think, might be placed beside some of our handsome-foliaged stove plants for its finely-marked leaf. When well grown I think, for a neutral bed or edging for summer, it might find a place in some flower gardens.

I am this year much pleased with *Lamium maculatum*, and beg to ask some of your numerous readers, What might not be accomplished by hybridising and cultivation with some of our British plants for spring flower gardening? I have also a good batch of *Sedum acre aureum*. Who would not admire a bed of *Arabis purpurea* with a golden chain of the *Sedum*, or a centre of red *Daisies*?

I have two mixed herbaceous borders, one on each side of a broad walk 150 yards long, each side backed by a Holly hedge. For the back row for spring I have large bunches of *Fritillaria imperialis*, the old crown imperial; then the double yellow *Daffodil*, each of the bunches about four feet apart; then a good sprinkling of *Polyanthuses* and *Auriculas*, and as a finishing edging the mixed single *Anemone*.

I also grow a good quantity of bulbs in variety; but April is the month I am most anxious to see the garden in its spring beauty; and, by way of a puzzle to some of the young gardeners, how am I to have a *Perilla* bed, edged with *Flower of the Day*, to be prime for April as a neutral bed, neither of the plants to have a flower on—their effect to be from the leaf? If no one can answer it before August I suppose I must tell them.—JAMES KIDD, Gardener, Bulwick Park, Wunsford.

APIARIAN SOCIETIES.

As keeping bees has been a favourite pursuit of late we trust that the very interesting observations at page 15, respecting the utility of the formation of a British Apiarian Society, may not be lost sight of; for surely there is as much interest for intelligence among bee-keepers as amongst fowl-keepers, farmers, and gardeners, whose societies spring up everywhere; and, as the thing has been so well pointed out, little more need be said, except, perhaps, if a British Society should prove too wide a sphere, surely local ones may be formed. In the meantime, however, I may give a few hints on the decline of bee-keeping among cottagers,

whose interest such societies should take under their especial care.

Cottagers have gradually neglected keeping bees of late years from various causes, but perhaps the greatest one is the remarkable fact of the evil effects of our long, cold springs; but let us trust that more genial ones may be permitted to return. Next, the loss of wild flowers by the cultivation of waste lands; the loss, however, is in some degree compensated by the increase of cultivated ones, and we have to note that waste lands offer only autumnal flowers for bees. And the general use of sugar, which has superseded, in some cases, the use of honey, is another effect of civilisation not to be contended with; but the sale of foreign might, perhaps, be checked by the more attentive cultivation of our own. In general the cottager is obliged to dispose of his honey to the druggist, who is likely to give a low price upon the certainty that he has no other market, and for good honey in the comb he seldom receives more than one-third of the price for which it is retailed in the shops. This is in the power of Apiarian Societies to remedy, by appointing agents to collect honey of them, or at least by pointing out a better market.

Horticultural Societies offer prizes for honey, but in general it is only amateurs who exhibit. Cottagers often keep back by either being dazzled by their novel hives or want of friends to encourage them. Still they have some true ones; for instance, the Earl of Traguair offers liberal prizes to cottagers for the best "caps of honey" collected among the Peebles hills; and the Rev. Dr. Gilly once told me that he has known cases where they have paid their rents from the produce of their bees. Likewise, Mr. Hart, land steward to Sir W. Middleton, who is not only a good practical farmer, but an able apiarian, and has done much good among cottagers, both by his advice and example in bee-keeping; and the great interest that the late Mr. Payne took to encourage them in the same way is so well known that I need hardly name it. But all such are their true friends, while the occupation in itself is a pleasure and relief to minds often oppressed with care and laborious pursuits.—J. WIGHTON.

THE STEWARTON SYSTEM OF BEE-KEEPING.—No. 2.

IN THE COTTAGE GARDENER, No. 449, the weights of three hives are given. These hives were weighed on the 15th of April, and to-day (May 15th) they stand thus:—

No. 1	23 lbs.
No. 2	23 lbs.
No. 3	20 lbs.

The bees received no assistance from me, and it will be noticed they have gained nothing for themselves. Such a result was to be expected, as, with the exception of a few days, the weather has been cold, searching, and backward, the prevailing winds being east by north.

In an ordinary season my hives gain a little weight from the Gooseberry bushes at this period; but, speaking comparatively, the month recorded has been a very bad one for bees. The last three days have, however, been all that could be desired, and the results are already apparent, as bees begin to show at the windows of the bottom boxes.

I expect to have something connected with management to record next month.

Recurring to the joining of weak stocks, I should say, as a general rule, this may be done as soon as possible after the falling off has been discovered, although my own practice is different.

Suppose, at the beginning of spring, I discover two of my hives weakly, to encourage breeding I cover them well up and feed as required. My object in this is to let both queens have life and employment till the commencement of the honey season, in order to produce an extra number of labourers. On the arrival of the honey season I join the stocks, give them a honey box, and generally have the pleasure of seeing the allies hard at work in this compartment on the following day. This method requires a little extra attention and some extra feeding; but the increased rank and file very soon make up for all trouble and expense with ample interest.—ROBT. WILSON.

IRON CEMENT FOR PIPING.—PREVENTING A CISTERN OVERFLOWING.

IN answer to the request of "ANOTHER EXPERIMENTALIST" I beg to forward the receipt for making iron cement.

Take $\frac{1}{4}$ cwt. of cast-iron borings, 3 ozs. of sal ammoniac powdered fine, and 1 oz. of flowers of sulphur. Mix them all together and damp them with water; put the mixture on a slate, board, or anything else convenient; pat it together as compactly as possible, and leave it to heat until the hand can be held on it, but not so as to turn the colour of the cement. When it has thus heated enough, which will be in about a quarter of an hour, put it in a vessel, and just cover it with water, from which it must be pressed out, as required, as dry as possible; but if it is left out of the water an hour and a half, or two hours, it will spoil.

Place the joints as required. For socket-pipes drive in about two inches and a half of spun yarn or stranded rope, well parged with red and white lead. For flange-pipes place a ring made of quarter-inch iron, wrapped smoothly with spun yarn, and parged with red and white lead, round the bore of the pipe between the flanges, so that the pins will all draw up tight; then in each case drive in the cement with a calking tool of the size of your joint, which any smith will make, taking care not to put in too much at a time before driving, and do not spare the hammer; also fill the joint. On no account use the cement after it has turned red, as it is then worse than useless.

Another correspondent inquires how to prevent the water from flowing over his cistern. If he uses a steam-pipe of $\frac{3}{4}$ -inch iron tube, tapped in the nearest part of his return-pipe to the cistern, and from thence conducted over the side of the cistern, and allowed to dip down into it for six or eight inches, he will find that will effectually remedy it. It does not matter if the pipe dips into the water; but if one of the "Improved Coil Boilers" is used there will be little inconvenience that way, as the water flows through quicker. The heat is got up in half the time, and the cost of the boiler is less than half, with a saving of fifty per cent. in fuel.—AN EXPERIMENTALIST.

QUERIES AND ANSWERS.

YELLOW DOG'S-TOOTH VIOLET CULTURE.

"I have forwarded to you a box containing a few plants of *Sedum acre aureum*. I have also inclosed a few blooms of the *Erythronium lanceolatum*, or yellow Dog's-tooth Violet, a plant which I seldom see in any collection. I have a large bed of it full in bloom, which creates a fine effect. It delights in sandy peat and leaf mould in equal proportions. It should be planted four or five inches deep, and not be disturbed, as my bed has not been shifted for twenty years."—G. T. F., *Leek*.

[The yellow tops of the shoots were blanched white by the time they reached us, and the green parts disappeared altogether; still we hope we may be able to save a little of it, as it must be a most welcome plant for the spring beds. The moss was too damp, and it got heated by some means. Many thanks for it. It is, indeed, very curious that yellow *Erythronium*, or Dog's-tooth Violet, is so scarce that one seldom sees it, although it increases faster than the other. However, it may thus be accounted for. This kind, like some Oxalises, *Bowiei* for instance, makes long root-like shoots, or feelers, or fang roots (*surculi* in botany), at the ends of which the new bulbs or tubers are formed. Now, when a "root" of this habit is planted on a deep bed or border, the *surculi* go right down to the bottom, if it were ten feet deep, in a very few years, and the "root" cannot flower from below a certain depth; therefore it does not flower at all after the first two or three years: it buries itself alive, and is dead and gone, nobody knowing how. Were it not for this, which was not known at the time, every garden in the kingdom would have a large autumn bed of *Oxalis Bowiei*, and the American or yellow Dog's-tooth Violet would be more common than the other among spring flowers. Now, let us hope the true system will be seized on by all lovers of spring flowers.

The proper depth and the right soil for a bed are given by our correspondent, and his rule of never disturbing the bed is imperative. Our friend should put himself in correspondence with a London nurseryman to bring out his *Sedum acre aureum* just as if it were a new plant from the north of Tartary. It ought to be made as popular as the *Golden Chain*, which very few gardeners knew ten years since, although it is one of the oldest of all Geraniums from sports; or like the variegated Mint, which was hardly known as a flower-garden plant this time last year. But the present name would condemn the best *Sedum* in the world: it smells so much of bread and butter, as Byron once said of another kind of beauty; but call it the "Golden Stonecrop," and all the world will rejoice in it after paying the piper.]

WHITE SAXIFRAGE.

"Mr. D. Beaton is afraid the double white Saxifrage is lost. At page 72 he says no one sees it now-a-days. I think I can find it. I saw it last summer in the garden of Mr. T. Dennis, gardener, Mirfield, where there is the best collection of old hardy herbaceous plants I remember to have seen. It is no new collection, as I have known it for thirty years, and many rare plants may be found there. Mr. Beaton rarely mentions one but what Mr. Dennis has. If Mr. Beaton wishes to have the Saxifrage I will try to get it for him. Should Mr. Dennis be run out I will get it before the end of the summer, as I can find it in two more places. I inclose you some *Sedum*, to ask if it is the same as you got from 'G. T. F., *Leek*.' The cottagers here call it 'Golden Moss.' [It is the same.] I have seen beds a yard across, and beautiful it is; but you must mind to keep the poultry from it, or they will soon eat it.

"Will Mr. Beaton have the kindness to tell me the name of a plant he mentioned some time since? It is like *Saxifraga sarmentosa*, with small red flowers upon every joint. I have never seen it, and should like to have it to hang in my cottage window with the above Saxifrage, which is endeared to me by old recollections of my youth. I was several years in getting it, not knowing the name, but at last I got it, and wish to keep it."—RUSTIC ROBIN.

[Mr. Beaton cannot call to mind a trailing plant "like *Saxifraga sarmentosa* with small red flowers upon every joint." Can you refer to the page where it is mentioned? He thinks *Disandra prostrata* must be the plant, but the small flowers are yellow, and not red; at all events, *Disandra* is the best match we know of for the Saxifrage. The double white *Saxifraga granulata* should be foremost among the late spring flowers, as it was in our school-going days. If you can send it to Mr. Beaton you would have a hand in establishing its character with the present generation. Could you not prevail on your friend, Mr. Dennis, to write out a list of his herbaceous plants, or of the more rare and old-fashioned kinds, for THE COTTAGE GARDENER?]

RAISING FLOWER SEEDLINGS.

"I have sown some seeds of *Acroclinium roseum*, a kind of giant Rodanthe. The seedlings are come up well out of the earth, in which they were sown in a pot. Having nothing beyond a window for growing plants or seeds, pray be kind enough to tell me how I am to treat them now. They have been raised in a small pot, with a small tumbler glass inverted over the mouth of the pot. I tilt the glass to give air, which I thought could not be wrong, as I feel it so essential to my own comfort.

"I have also some seeds of *Browallia elata* and *Anomatheca cruenta*, *Schizopetalon*, *Clintonia*, *Microsperma Bartonoides*, *Thunbergia*, *Scypanthus*, and *Sabbatia campestris*, all of which are shy in coming to light. All are sown in light, sandy soil, in which fibrous peat is mixed, all in pots, with tumbler glasses over, in my window. There is a fire in the room, and always plenty of air from an open door. They do not appear, but I have so much confidence in the person from whom I had the seeds that I am sure quality cannot be the reason of their non-appearance. They have been sown more than twenty days.

"But, above all, pray tell me what to do with *Microsperma*

Bartonioides if it should ever appear; and, if *Anomatheca cruenta* should appear, will it bloom this year?

"My position not allowing me the advantage of pits or frames, I beg of your kindness and experience some advice as to the treatment of all; for, lowly as I am, I have as vivid an appreciation of beautiful flowers as the Queen herself can have."—A COTTAGER'S WIFE.

[We thoroughly and sympathisingly believe you, and wish you joy in possessing such an appreciation of the beautiful; but even that wishing, though showing our sympathy, will be next to inoperative so far as you are concerned, because, whatever your cares and troubles, we feel convinced that such tastes and aspirations have imparted to you many sources of happiness and comfort. A glorious thing will it be for our country when cottagers' wives generally have such tastes. The husband would feel a pleasure in his garden, and spend his spare hours in his own house, because his neat-handed, pure-minded wife had made it of all others the most beautiful and attractive to him. We also feel pleased that in sowing your seeds you have acted so much in accordance with the articles on window gardening, because, even supposing that you have not profited by them, but knew all about how to manage such things before, they show us that such simple instructions are likely to be useful. We regret that you have not been so successful as we think you ought to have been, but some of the seeds require more heat than you have been able to give them, and if the plants had come you could hardly do them justice. We will glance at them all in turns, merely premising that, as you have succeeded so well with *Acroclinium roseum*, many of the other seeds ought to have made their appearance if all right, and neither covered too deep nor left too much exposed.]

Acroclinium roseum.—We do not yet know a great deal of this plant, and as in your case we presume the pot is small, instead of potting off your seedlings we would advise shifting the whole into a larger pot, pressing them a little to the sides of the new pot to give them top room. If still rather thick, take a few thinnings from the centre, and try them by planting three or so in a five-inch pot.

Microsperma Bartonioides.—See what Mr. Beaton says of it, p. 219 last volume. As soon as it appears move little patches with your bodkin into similar pots, and sail them with water; as the soil gets dry set the pot in a pail until the soil gets wet enough without wetting the plants, or sail the pot all round by pouring the water on a piece of crock close to the side of the pot; watering overhead will be sure to injure it. As they grow, then move, but keep the pots in-doors in the window until the plants are a good size, when they will bloom in the autumn either inside or outside.

The *Browallia elata* would have been better with more heat; you might move it to the fireplace at night until it was up. Pricked off and grown on, you might expect little blooming plants in September. It is too tender for a window annual unless great care is taken of it.

Anomatheca cruenta.—If these had been placed near the chimney corner at night many of the seedlings would have bloomed late. In your case, now, we should not expect many to do so. When fairly up it would be well to encourage growth by free watering, until the leaves began to be yellowish; then refrain, and let the soil become gradually dry, and in that soil keep the little bulbs all the winter, or take them out and keep them in saucers covered with dry sand. Plant in spring as they begin to move, and next summer you will have neat little window plants in bloom.

Schizopetalon Walkeri.—A very singular white little annual, which will merely require to be thinned out if thick, and will bloom well inside the window, or outside after June. It ought to come up well in the window.

Clintonia pulchella and *elegans*.—The seeds of these should merely have a dusting of a covering, and the surface should be kept moist by shading the glass that covers it. As soon as handleable prick the seedlings off in patches, and they will thrive well inside the window, or outside after June.

Thunbergia.—You could only succeed with this in a window by keeping the pot moist, and placing it in a saucer over the oven or boiler at the side of the fireplace at night. You could not do much with it in a window even then, as it requires a good moist heat when young, and without this it becomes a prey to red spider and other insects. We have

often tried it out of doors in summer in Hertfordshire, but with little success. We have had it good against walls in London. Mr. Cockburn, at Kenwood, used to have fine wreaths of it running along chains in the flower garden, which looked beautiful. The seeds are so hard that they vegetate more freely when immersed in water previously for a few hours at a temperature of 90°.

Scypanthus.—These are rather hardy annuals from Chili, and should have been up if kept damp enough. They will merely require thinning and dividing to bloom out of doors in summer and autumn. The genus frequently goes under the name of *Grammatocarpus*. A little care should be used in handling them, as, like the *Bartonia*, they have acrid properties.

Sabbatia.—These are mostly American biennials, and will not bloom until late this year, if at all, but will flower the next season. All are marsh or boggy plants, and therefore the seed pot should stand in a saucer supplied with water. The same precaution should be used when growing them in pots.

Mimulus.—Another correspondent wishes to have seedlings of these to ornament her house in early summer. It is now too late to sow. Unless these marsh-loving plants are kept very moist and in a saucer they do not thrive well in summer. For house work they are very ornamental until June or the beginning of July when sown in September, or the plants divided into separate little pieces at that time. Seeds sown now, and when up pricked out into a moist, shady place, would bloom well at the end of summer and autumn. At Mr. Wood's, Bedford Nursery, Hampstead Road, we lately saw thousands of *Mimulus*es in little pots in full bloom, of almost every conceivable shade and variety of colour, from seed sown in autumn, and we understand there was a great demand for them. We also perceived that at the same establishment they continue to be as successful as ever with that beautiful plant the *Daphne odora rubra*.

Schizanthus.—In answer to several inquiries we would say, to have it bloom out of doors in autumn all the varieties may be sown there at the end of May. To bloom earlier sow in spring under glass, and prick or plant out in May. To have fine flowering plants in pots in the greenhouse in spring and early summer sow early in September, prick off into small pots as soon as handleable, and after being somewhat established keep them in an airy, sunny place near the glass all the winter, and as soon as the day begins to shorten give them more pot room, so as to encourage good large bottom leaves before the flower-stems rise, and the sight will be worth looking at.]

PLANTING AN ORCHARD.

"I am about to inclose an acre of waste land near Uckfield, Sussex, and purpose planting it as an orchard solely, with a selection of fruit trees taken from your lists in the first volume. The soil is a stiff clay, and I think rather a sandy subsoil, very retentive of moisture; and I shall, in the first place, have it thoroughly drained in the autumn, and thrown up into ridges until the following spring, and then plant the trees. On some parts there is very little of what they call mould, and I would ask your advice as to whether you think such a site eligible for the purpose, and should feel obliged with any hints that may suggest themselves to you as to the *modus operandi*. The ground slopes to the east, or a little south-east, and the sorts I have selected I will briefly enumerate.

"*Kitchen Apples*.—John Apple, or Northern Greening. This is much cultivated in the wild part of the country I am speaking of. King of Pippins, Norfolk Beaufin, Bedfordshire Foundling, Minshall Crab, Dumelow's Seedling, Blenheim Pippin, Keswick Codling, Manks Codling. *Table Apples*.—Early Harvest, Early Red Margaret, Kerry Pippin, Hicks' Fancy, Pearson's Plate, Ribston Pippin, Old Nonpareil, Lamb Abbey, Sturmer Pippin, Mannington Pearmain, Barton's Free Bearer.

"*Plums*.—Précoce de Tours, Morocco, Drap d'Or, Greengage, Royal Hâtive, Reine Claude Violette, Coe's Golden Drop, Washington, Jefferson's, Magnum Bonum.

"*Pears*.—Citron des Carmes, Jargonelle, Dunmore, Williams's Bon Chrétien, Beurré d'Amanlis, Aston Town, Marie

Louise, Beurré Diel, Passé Colmar, Hacon's Incomparable, Glou Morceau, Winter Nelis, Knight's Monarch, and Easter Beurré.

"I shall not have all these, and, therefore, if you could inform me which will be best adapted to my soil, aspect, &c., I will thank you.

"Do you approve of cultivation between the trees, as I shall plant thirteen feet apart, and for some time, of course, the trees will not be large enough to shade any crop, such as Potatoes and the like?"—A. H. H.

[Your intentions are good, and give evidence of a thorough knowledge of what you are about. With regard to the eligibility of the site, we are of opinion that it is quite adapted for the purpose, particularly if you follow out your intention of a thorough draining. Your selection of Apples is good; but why have you omitted the old *Forge* so much grown in your part? You must have that. We have known cottagers pay their rent from the crop of one tree; it always bears. You must not venture on Ribston Pippin; it will never do any good with you. Your list of Plums is also good, but you have too few culinary sorts. Substitute *Diamond* for the *Washington*; you do not want both that and the *Jefferson*. From your list of Pears leave out *Glou Morceau*, *Easter Beurré*, and *Williams's Bon Chrétien*. We do not approve of cultivation between the trees at a distance of thirteen feet apart, but you may for the first year or two grow light crops. One half and more of the fruit trees in the kingdom are spoiled by digging about the roots and driving these down into the subsoil, inducing canker and disease, and then people cry out about "degeneration." No, no; if you want a healthy orchard, sow it down in grass after the trees are well established and the roots begin to spread, and top dress it every year, keeping the roots near the surface, but never dig and crop close up to your trees; you may fork the surface carefully, but never dig it.]

TO CORRESPONDENTS.

FLOWER-BEDS (*Delve*).—To give an opinion on the form of a single bed can be of no use; if it pleases the owner it is all that is necessary. It is of little consequence that we think, unless the shapes can be accounted for from some objects lying near them, or from the nature of the ground, they are frightful in outline; and we cannot form the smallest idea how they should or could be planted.

DELPHINIUM FORMOSUM (*Ruhtra*).—This is quite hardy, and will stand our winters.

CLEMATIS MONTANA GRANDIFLORA (*Peachy*).—The colour of its flowers is white. It is, like most of the Clematises, rambling in its growth. It is quite hardy.

BLOTCHED LEAVES OF ROSES (*Miss Cooper*).—If Roses are budded upon stocks which do not supply sap so fast as the growth of the branches and other parts requires, or if the soil is very light and dry, their leaves will blotch and fall. The best preventive is to excavate the soil down to the roots in a circle extending two feet round the stem, to cover them with about two or three inches in depth of well-rotted stable manure, and to return over this a portion of the excavated soil, but leaving a basin to admit a gallon of water being poured in three times a week in dry weather.

COWSLIP WINE (*An Old Subscriber*).—For each gallon of water have a gallon of Cowslips, the pips only, three pounds and a half of lump sugar, and three lemons cut in slices, peel and flesh together. Boil the sugar and water for half an hour, skimming the liquor well. Put the pips and lemons into the cask next day, and pour the cold liquor upon them. Ferment it with a little yeast spread upon a toast; stir it well daily for a fortnight; then put in some brandy—a bottle is enough for twelve gallons—and bung it up.

REMOVING HIVES (*An Old Subscriber*).—Removing them only a few yards causes the difficulty. If you purposed removing them some mile or two there would be none. You cannot move them more than an inch daily without a certainty of great loss. The asphalt for a pond bottom would impart a taste to the water, and be injurious to the plants and animals partaking of it; otherwise it would answer.

NON-DELIVERY OF OUR NUMBERS (*Subscriber, Wingham*).—The failure must have been with the bookseller's London agents; there was no delay on our part.

NAMES OF PLANTS (*J. W., Maidenhead*).—1. The yellow is *Candollea tetrandria*. 2. The pink, *Indigofera Australis*. (*Betty*).—The plant which came up among your Maltese Cinerarias is not a weed for certain. Take care of it, plant it out in your flower border, and if you have any doubt about it when it flowers then send us a specimen. We believe it to be *Senecio elegans*. (*H. B.*).—Your plant found in a Derbyshire cottage garden is the *Asarum Europæum*, common Asarabacca, or Foal's-foot, Hazelwort, or Wild Nard. This curious kidney-shaped-leaved plant is very rare in England, of which it is a native. It should always be planted in a shady border, where it flourishes well. It has been found near Preston, in Lancashire; near Kirby Lonsdale, Westmoreland; by the roadside between Henley and Maidenhead; plentifully in Broad-bottom Wood, near Mytholmroyd, six miles from Halifax; and at West Binny, near Linlithgow.

VINES ON A WALL FIVE FEET AND A HALF HIGH (*A Beginner*).—The Thomery system succeeds perfectly here. Do not you know the Vine bears fruit on the young wood of the current year? You need

not, therefore, be afraid of starting "the fruit-buds of next year" by stopping the growing shoots of this season.

VERONICA SYRIACA.—**DELPHINIUM FORMOSUM** (*L. M.*).—The *Veronica Syriaca* is only "coming out" this season, and, without venturing on the spirit of prophesy, no one can say what it is fit for more than what the advertisements affirm respecting it. Every one who can ought to buy it, however, for there is no doubt it is a good thing while it lasts. The *Delphinium formosum* is the finest Larkspur in the world, and grows from eighteen to thirty inches high.

BOOKS (*A Young Gardener*).—If you wish to acquire a thorough knowledge of plants you must study them first in their great divisions, then in their families, and afterwards in their genera and species. You cannot have a better book for such a purpose than *Hogg's Vegetable Kingdom and its Products*, which not only gives you the characters of all the families of plants, but enumerates all the genera of every family, with their synonymes. The price is only 2d. a week, and it is crammed with engravings. The best book to explain the meaning of botanical terms is *Henslow's Dictionary*, published by Groombridge.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JUNE 3rd, 4th, and 5th. BATH AND WEST OF ENGLAND. Sec., Mr. John Kingsbury, 10, Hammet Street, Taunton. Entries close the 1st of May.

JUNE 26th. EXETER. Sec., T. W. Gray, Esq., Queen Street, Exeter.

JULY 8th, 9th, and 10th, 1857. LEAMINGTON. Sec., Thomas Grove.

JULY 9th. PRESCOT. Sec., J. F. Ollard.

JULY 28th, 29th, and 30th. SHEFFIELD, SOUTH YORKSHIRE, AND NORTH DERBYSHIRE. Sec., William Henry Dawson, Fig Tree Lane, Sheffield.

AUGUST 8th, 10th, 11th, and 12th. CRYSTAL PALACE. Sec., W. Houghton.

AUGUST 19. BRIDLINGTON. Sec., Mr. Thomas Cape.

SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.

SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Sec., Mr. H. Churchill, King's Head Hotel.

OCTOBER 1st and 2nd. WORCESTER.

NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.

DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.

DECEMBER 30th and 31st. BURNLEY AND EAST LANCASHIRE. Entries close December 1st. Secs., Angus Sutherland and Ralph Landless.

JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.

JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.

N.B.—Secretaries will oblige us by sending early copies of their lists.

A REVIEW OF OUR NUMBER 449.

AMONG other "approaching Poultry Shows," we have now to notice that advertised for Gloucester. The prizes amount to above £500. To enable the Committee to do this they require one thousand entries. Like the Worcester Committee, they also undertake to return the money in full if they do not receive sufficient support to justify them in carrying out their arduous undertaking. Exhibitors have the option of pieces of plate or cash, and first prizes of £20 will, we think, be a strong inducement. There are 114 prizes. These, to one thousand entries, will give one prize to nine pens. Add to this tempting bait the probabilities of sale, and we think the Gloucester Show will appear a safe investment.

"CHANTICLEER" will, we are afraid, think we are putting "Fancy" in rather a mercenary light, but it is an additional inducement to follow it if it can be made self-supporting or something more. Cattle Shows were the precursors, and, in reality, the founders of Poultry Shows. Breeders of cattle were not so thin-skinned as some of our poultry-breeders, and even the most noble among the successful at the Agricultural Meetings do not hesitate to make, we had almost said, a trade of it. A strain of unusual excellence is made by judicious crossing, and regular sales of the produce take place annually. The animals are also let on hire for breeding purposes. Wealthy men of high standing in the northern counties derive incomes from animals let out in this way, and every one has smiled at the pedigrees of Shorthorns. Let "Master Butterfly" and many others take revenge for the smile by showing the prices, from £700 to £1200 each, that they have realised. Those who have improved the breed of cattle are looked upon as benefactors, and we would award the same meed to breeders of poultry. As it often happens those most skilled in this process are not the most wealthy, success at exhibitions may help their efforts, and we think they should be encouraged in every honourable way to persevere.

We have often advised Secretaries, and we do so again, to

draw up stringent rules, and to have one printed answer to all applications, to the effect that these rules will be un-deviatingly carried out. Judges should be chosen above suspicion, and their awards should always be final. Pens should be allotted according to priority of application. Pregnant shrugs of the shoulders, Burleigh shakes of the head, and mysteriously significant speeches should be avoided. If there be abuses, let them be openly and strictly done away with; but let every man honestly weigh his motives and scan his feelings before he gives pain to others, or even diminishes their pleasure. Judgments are open to all, and points and qualities of birds are sufficiently understood to render it plain to any one if there is any deviation from the rules that should dictate them.

Now, are Brahmas Cochins? It is an odd question. We recollect one just as curious on the Western Circuit. It was an action for trespass by fowls and pigs. The counsel asked, "Is there a sufficient fence between the two gardens?" "There was till the animals destroyed it." "Then you mean to swear—pay attention, if you please—that the fowls got under the fence, and the pigs flew over?" "Yes, sir." "Then stand down; that will do." Mr. Tegetmeier may find the frontal groove very plain in both breeds, and yet it may prove no more than the fact of Silkies and Dorkings both having five claws. The same sort of skull may be found in all the Hawk tribes. The same may be said of Pheasants. In many instances opinions are formed on insufficient grounds. To come to a correct judgment there must be a good opportunity for observation. If fowls are kept in semi-confinement use becomes second nature, and they are perforce content with what they have; but any one who has been able to afford an unlimited range to his poultry will at once agree in the truth of your querist's remark, "Brahmas roam over acres, and fly over fences and gates with ease; Cochins never seem to grow tired of the same small piece of ground, and are confined by a three-foot fence. Brahmas roam till dark; Cochins roost early. Brahmas forage; Cochins have no idea of it."

We once kept Cochins, and a fence four feet high made our garden secure. We then kept Brahmas, and in a fortnight there was nothing left in it. We had sixty Cochins, and only ten Brahmas. Our experience is, the latter eat less and lay more. They have more breast than the former, and their breast-bones are deeper. When these birds were scarce it was attempted to manufacture them: it was found impossible, and was given up. The fact is, some people, having started with a wrong opinion, stick to it, rather than admit that they were mistaken.

Now for the Spanish. I am a great admirer of them, and, although I am a "Londoner," yet in their defence I will be "the Cid, Don Ruy de Diaz, hero of Castille and Spain." They are especially adapted for London. A back-yard will make them an excellent run. They will keep in first-rate condition and feather; they will always be healthy, and will lay what a figurative friend of ours calls a "power" of eggs. And then such eggs! Some will tell you an egg is an egg; but ask the good thrifty mistress of the house, or if you keep a cook, and sponge-cakes are wanted, ask her, or if you eat eggs for breakfast, ask yourself, whether an egg is an egg. Two Spanish are equal to three of any others. Now, we must give you an account of some very valuable Spanish fowls and their walk. Let us first tell you that we offered £10 each for them in vain.

In the suburbs of London many of our readers may know those small houses built without underground premises, and composed of two rooms on a floor, with a small yard behind. They were doubtless originally built in the country, but they have long since been built in "fore and aft," and now find themselves in the centre of London. We were directed to one such in search of Spanish fowls. We there saw some of the best we have ever seen. They were kept in a yard, or rather over one, for the space was required for children, for clothes-drying, and twenty other purposes. It was about sixteen feet by twelve, but one corner of it was occupied by a water-butt. Now let me describe the Spanish run.

About six feet from the ground, and projecting two feet from the wall, was a continuous cage extending all round the yard. It was about two feet high, made of common laths, but having a close bottom. At one extremity was a

roosting-place rather higher than the run, and the whole was supported by posts at equal distances. On high days and holidays the side of the roosting-place was opened, and, a ladder being placed against it, the good fowls descended, and for a time enjoyed the privilege of the whole yard. They were guiltless of any knowledge of green meat save a cabbage suspended by the stalk from time to time. Here they lived in first-rate condition, and laid merrily. Now, as to their moulting, they are then shabby, but so are all others. It is common to all hens to have seedy combs and shabby plumage at that time, and such merits as I have stated may safely outweigh a temporary dull appearance. Well may the Londoner and all townsmen like the Spanish. —H. R.

CROSS BREEDS.—MALAYS.—GAME.—FOOD.— MEDICINE TO INDUCE LAYING.

I AM going to trespass on the space of your capital paper, because I have something to say on two or three points connected with poultry-keeping. In your paper of the 12th of May "A HAMBURGH FANCIER" says, "Why do not persons who do keep fowls keep only one sort, or have the different sorts separately?" Now, sir, nine-tenths of the poultry-keepers in this country keep fowls merely for eggs, chickens, and for the pleasure of keeping them, and do not care for showing them, and it is, I think, where one does not care about exhibition, a very excellent plan. You keep two or three hens of each of the chief breeds, and two or three cocks, and thus you can compare the egg produce of the different sorts, and find out the best cross breeds. If you want pure-bred fowls for exhibition you shut up your hens with their proper cock before they begin a fresh batch of eggs. Great is the want now of a cross breed of fowls fit for the farmer or poulterer. We do not want in these colour, or beauty, or form, but *plentiful layers, good hatches, and large, quick fatteners*. Yes, this is the great want now. Our pure breeds are perfect, but very bad are our common fowls, at least as an average. Very rarely do you find a good cross breed at any farmer's. They go on in the old beaten track, and never introduce fresh blood into their stock. I think you will acquiesce in what I say. Crosses between Cochin and Spanish, Brahma and Spanish, Hamburgh and Malay, Dorking and Poland, are some of the best.

Now, the second subject I wish to speak about is the Malays. How neglected is this breed! yet I consider them handsome, and, if well kept, profitable. Though not remarkably good layers, they are splendid sitters and mothers. Moreover, they are excellent to cross with the common Barn-door fowl, as they give size and *height*. They are of all colours, but cinnamon brown is the commonest. Their eggs, some people say, are richer and more full of yolk than those of any other fowls, but I won't say *that*. I wish people would breed them more, and introduce them to our farm-yards.

And here, though *mal-à-propos* to my subject, let me say that Game fowls, as well as being considered beauties and show and fighting fowls, should be estimated as profitable. They are good layers, capital foragers, and beautiful sitters.

Another thing I have to say is upon the growing liking for our old friends, the much-disputed-about Brahma Pootras. Will any fancier of these print an account of their laying and sitting qualities, as I want to know if they or Cochins are better London winter fowls? Brahmas fetch a very high price at the sales now.

By the by, let me recommend oatmeal, barleymeal, and Indian meal, mixed up, as a capital food for fowls. I find mine thrive very well on this, and on barley and boiled Indian corn; but generally speaking fowls are far too much pampered now, so that they sometimes refuse good plain food.

For the benefit of those of your readers who wish to force their fowls to lay (but to destroy them at the same time, although the consequences do not appear till afterwards), I send you this receipt:—Mix 1 oz. of Glauber salts with meal of potatoes, and feed the fowls thereon for three or four days, and the fowls will *infallibly* lay.

Now, can you tell me which are the best generally, Buff,

Black, or Brown, or Partridge Cochin Chinas? I hope I shall soon see some tables of egg and chicken produce in the columns of your excellent POULTRY CHRONICLE, to which I wish every success, and remain—A WILTSHIRE POULTRY-KEEPER.

PIGEON CLUBS OF THE METROPOLIS.

AMONGST the various societies or clubs in London for the improvement of the feathered race, those which take cognizance of Pigeons attract a special amount of notice, owing, in a great measure, to their encouraging an agreeable recreation for all classes, and one which is attended with few drawbacks. I wish to draw more attention to those which may be considered as occupying the first rank; not that I estimate them more highly, but because I believe that they are the most suitable for the majority of the readers of THE COTTAGE GARDENER. Although some few gentlemen belong to that gigantic Society in Southwark, still they frequent it with a view of purchasing, not of exhibiting their birds. The old *Columbarian Club* was, till a few years back, the principal, if not the only club from which dealers and others of that class were rigorously excluded, and during its existence it enjoyed a reputation which has long survived the extinction of the Club.

More recently the *Philoperisteron Society* was established by a few gentlemen who hoped to place it upon a similar footing as its predecessor, but its honours are now shared by the *National Columbarian Club*, which, although it was only started in the close of last season, has already passed the *Philoperisteron* in point of numbers.

The *Philoperisteron*, although in some respects equal, is, I think, in many points inferior to its rival, or perhaps I should say that its increased expenses are not, in my opinion, counterbalanced by corresponding advantages. For instance, its subscription and entrance fees are double those of the *National Columbarian*, without its being in any respect more select. True, its supporters urge the fact of the surplus funds being devoted to a grand annual dinner; but then, to cover the expenses of that, there is an additional contribution from each guest; and as, after the first cost of the pens, the sole expenses should be for the rooms and printing, with a trifling sum for postage and such-like small items, I think that the *National Columbarian Club* have chosen the wiser path in fixing their subscriptions and entrance fees at so low a rate, since, as every member is balloted for, no unpleasant mixture can take place. They are also wise in having no such extravagance as a grand annual dinner, which entails an extra expenditure of about one guinea per head.—J. H. S.

CHARACTERISTICS OF GAME FOWLS.

YOUR correspondent, "A NORTH COUNTRY AMATEUR," having written a very able article on "Game Fowls, Colour of their Legs, and other Points," in which he quotes my communications in higher terms of commendation than they deserve, I feel it right to make some reply on the subjects he mentions.

As to legs I cannot change my opinion, and would not keep a *white* or *blue-legged* Game fowl. I have tried the effect of a cross between a *yellow-legged* Black-breasted Red Game cock and a *blue-legged* Game hen of the same variety, and the result was that all the chickens but *two* out of eleven took after their parents, five being *yellow-legged* and four *blue*. Two were, however, willow-legged, but that I attributed to some cross in the parents. I must agree with "W." that *white* legs do give a soft appearance to Game fowls, in spite of the celebrated white-legged Black-breasted "Derby Reds." I have heard that their originals were yellow-legged, but that the white legs were preferred for the earl's table, though I cannot, of course, positively state this as a fact.

I cannot quite understand what your correspondent means by a "primitive" variety of a domesticated kind of fowl, as in my opinion there could only have been *one* primitive variety from which the whole originally sprung; and by crossing with other sorts and various intermixtures it is that the numerous varieties have arisen. The Black-breasted

Reds are, in my opinion, the nearest to the original stock by far. The hens should be dark partridge-feathered. I go in this opinion from the Indian varieties, as I have stated in a former communication. The light or wheat-coloured Black-breasted Red hens that I have had have almost always thrown either "dun" or "pile" chickens occasionally, and I therefore believe that they must be crossed with those varieties. I also consider the Black-breasted Reds to be by far the handsomest variety, particularly the cocks. *Grey Duckwing* hens of the proper silver colour are certainly very handsome, but the cocks are, in my humble opinion, inferior to the Red birds of both colours; but, of course, *chacun à son goût*, as the French say.

It would be better for the Game fanciers if they could get up an *exclusively winter Game-fowl Exhibition* with the cock chickens undubbed, so that their combs might be judged as well as themselves, and in which every variety could only compete with birds of their own colour, and all different varieties in *separate* classes; but I suppose such an exhibition could hardly be obtained. If it could be obtained it would have to be as nearly central as possible, or where the greatest number of railways meet, as at Birmingham for instance. It would, in such a case, be easy to lay down rules as to *which coloured legs* each separate variety should possess; but there would, of course, be very great difference of opinion on such a subject. Your correspondent seems to class the yellow or straw-coloured Duckwings as the same breed with the "Silver Duckwing Greys," whereas I believe the former are bred from the Black-breasted Red; and the latter, the "Silver Duckwing Greys," with hackles and saddle all as near as possible to *white*, but yet retaining the *Duckwing*, are a far purer variety, and not crossed with the Reds. Any person can breed the straw-coloured birds with copper saddles from a Black-breasted Red cock and a Silver Duckwing hen. I consider that the straw-coloured, copper-saddled, and generally brown-winged Duckwings should have *yellow* legs, as they have in most instances been bred from the *yellow-legged* Black-breasted Red and the *Grey Duckwing hen*, and therefore follow their proper lead.

In stating as above I am perfectly aware that several good breeders insist that the Silver, not Yellow Duckwings should have silver or white legs; and I have also heard people who have paid attention to breeding say that the "Blues" or "Duns," as we term them here, should have blue legs.

I have not the conscience to monopolise all your poultry paper in describing the different varieties of Game fowls. The "Birchen Yellows," as I consider, stand in the same relationship to the Duckwing Yellows as the Brown Reds do to the Black-breasted Reds; and I cannot think that any of the straw-coloured varieties can be original, as they were all crossed with the Red birds. The Birchen Yellows are, most probably, a cross between the Brown Red cock and Dark Grey hen, as I have produced them in that same way. Some people say that the Brown Reds are a cross between the old Black breed of the reign of King Charles II. and the Black-breasted Reds. Such *may* be the case, but I doubt it, as the true Brown Red hen is *dark purple* or "gipsy-combed," and they are called hereabouts the "Gipsy Reds."

As to "Piles," if the "NORTH COUNTRY AMATEUR" will put a Black-breasted Red cock to a white-legged White Game hen (the cock having yellow legs) he will, I am almost certain, having done the same myself several times, get well-marked Piles without black feathers in their tails. In this case the cock should "cut out" lightish.

I have been a little in the north country, and, as far as I could observe, the "Blues" or "Duns" predominated. I have also seen the "Henny-feathered" cocks, as they are here called, but cannot admire them. "Spangles," I think, are certainly the result of crossing, as I have produced whole broods of them only by mixing colours on several occasions. As to black legs, as your correspondent observes, Brown Reds, Brassy-winged, and Blacks, often or generally have them, or what are termed black. As far as I have seen, black legs are only dark brown or bronze colour; white legs are only flesh-coloured in reality, not white; blue legs are slate or ash-coloured, not blue; yellow legs are *yellow* beyond dispute; olive or willow legs, though of different

shades of green, are certainly to be classed as green legs, and, as I have before observed, should have a yellow ball to the foot. There is another colour of legs common here, "the carp legs," which some breeders much approve of. They are nearly the colour of a carp's back, but I fancy are crossed off the white legs.

I have communicated with two other old breeders of Game fowls in this neighbourhood as to the different original varieties of the Game fowls, and their ideas are as follow, but I cannot quite agree with either party:—

No. 1.

- | | |
|---|--|
| 1. Dark Reds (Brown Reds).
A more correct term considering the colour of the hens. | 4. Dark Berry Birchens. |
| 2. Black-breasted Reds. | 5. Silver Black - breasted Duckwing Greys. |
| 3. Black - breasted Yellow Duckwings. | 6. Clear Mealy Greys. |
| | 7. Dark Greys. |
| | 8. Red Duns. |

No. 2.

- | | |
|---------------------------------------|-----------------|
| 1. Black Reds. | 8. Furnaces. |
| 2. Silver Black - breasted Duckwings. | 9. Polecats. |
| 3. Birchen Duckwings. | 10. Cuckoos. |
| 4. Dark Greys. | 11. Gingers. |
| 5. Mealy Greys. | 12. Red Duns. |
| 6. Blacks. | 13. Duns. |
| 7. Spangles. | 14. Smoky Duns. |

All these varieties I have seen, but do not consider them all original. If they are all original, Whites and Blacks certainly must be. In both lists they omit the "Whites," and the first omits the "Blacks," and the last puts in far too many party-coloured birds—all the results of crosses.

I have my birds all good as to shape; but it is difficult here to get a pure-bred Game fowl as to colour, as the breeders all cross with any particularly *well-shaped* bird they happen to take a fancy to, setting aside colour altogether. I have been trying for some years to get rid of the few white feathers occasionally shown in the wings of my Black-breasted yellow-legged Reds from the Pile cross, but have not yet succeeded in so doing. I have plenty of Black-breasted Reds, a few Brown Reds, and a few Duckwings; and if the "NORTH COUNTRY AMATEUR" could procure me a cock and two hens, or a "stag" and two pullets, of *pure dark Partridge-coloured Black-breasted Reds, yellow or willow-legged*, I would send him any of my best fowls in exchange to cross with, *cocks or hens*, or purchase them of him, whichever he pleased. I am perfectly aware that "green" is not an original colour, being composed of "yellow" and "blue," as anybody may see by mixing paints together; but "green" in the legs of a fowl is, I should say, as *original* as green in the feathers, which several varieties have of even the wild species.—NEWMARKET.

P.S.—The wild varieties are, by naturalists, supposed to proceed from the *Gallus giganteus* of Sumatra, and the *Gallus Bankiva* of Java, both Red varieties. The latter are certainly the origin of Game Bantams, as can be distinctly seen, and beautiful little birds they are.

CLASS 5.—PIGEONS WITH STRANGE VOICE.

VARIETY 1.—THE LAUGHER (*Columba ridens*).

Of the Pigeons with peculiar and prolonged voice the so-called Laugher is the variety to which I shall first allude. There have been scarcely any of this breed in this country for many years, but two stocks have lately been re-imported which may be regarded as sub-varieties of each other.

The first of these was, I understand, imported from Arabia about twenty years since; they closely resemble a chequered Dovehouse Pigeon, perhaps rather smaller, and very slightly feathered on the shanks. The only difference I could notice in the pair I had was a little fulness at the back of the neck just behind the head, and the edge of the eyelids was inclined to red, presenting a narrow red thread round the eyes something like that of the Turtle Dove. In plumage the cock was a dark chequered; the hen chequered, pied with white.

The second family, I was told, was imported from India, there obtained from the Mahometans, who bring them from Mecca when they return from their pilgrimage, and by them are much esteemed. These have the same Dovehouse form, with the addition of very narrow turned crowns or little peaks at the back of the head. In plumage they are what fanciers call a light haggie, that is to say, something between a grey mottle and a grizzle. Of this latter breed I have seen one blue.

The great peculiarity of this variety of domestic Pigeon consists in their strange voice, which baffles description. It is prolonged, broken, and gurgling in utterance, not so sonorous as that of the Trumpeter, but more varied, sometimes resembling what we might imagine an Almond Tumbler to say if he stammered, and, again, rather resembling the purring coo of the Turtle Dove. It is, too, often interrupted by one or more inspiratory "ahs," from which, perhaps, they obtain the name of Laughers.

Mr. Moore, 1735, gives the following description: "*The Laugher*.—This Pigeon is about the size of a middling Runt, and much of the same make, and I am informed has a very bright pearl eye, almost white. As for its feather, it is red mottled, and some tell me they have seen blues. They are said to come from the Holy Land, near Jerusalem. When the cock plays to his hen he has a hoarse coo, not unlike the gurgling of a bottle of water when poured out, and then makes a noise which very much imitates a soft laughter, and from thence this bird has its name."—B. P. BRENT.

OUR LETTER BOX.

FOOD FOR SHORT-FACED PIGEONS (*T. W. Wrench*).—The best mixture of food for Short-faced Pigeons is clean old tares, very small beans, and a little wheat. To make them profitable breed them accurately, but not too in-and-in, and sell them reasonably. Pigeon eggs, we believe, will keep good for hatching about ten days or a fortnight if not exposed to damp or kept too warm. We never heard of Rabbits bathing, but see no reason why it should hurt them in fine weather.—B. P. B.

PIGEON HOUSE.—*A. Stonehouse* does not say in what situation he is desirous of erecting a pigeon house. We would refer him to Mr. J. M. Eaton's diagram of fitting up a pigeon house. We also intend ourselves giving a few directions in the course of our series on Pigeons.—B. P. B.

PIGEON CLUBS (*Henry Heinrichs*).—There are two Pigeon Clubs of which we occasionally hear. The Philopisteron, who hold their meetings at the Freemason's Hall, is the most aristocratic; the Southwark Columbarian Society, Yorkshire Grey Tavern, of which Mr. J. M. Eaton is chairman.

DORKING CHICKENS (*An Old Subscriber*).—If they have the gapes, and fumes of turpentine do not cure them, we know of nothing that will. If one of them dies open the windpipe, and examine if any worms are there. If they are not there, then the disease is not the gapes. The turpentine fumes should be inhaled as long as the chicken seems able to bear them.

TRYING EGGS IN WARM WATER (*Gorton*).—If not hotter than 95° it will not injure the eggs. Sods or turfs would do for the bottom of a hen house, but they would be troublesome to keep clean. Duck eggs require for hatching usually twenty-eight days, but those of the Muscovy Duck require thirty-five days. Buy "The Poultry Book for the Many;" it is only sixpence.

TAME RABBITS (*S. Cook*).—There is no good book upon keeping Rabbits. Mr. Boulton will say more about them, and when completed we shall publish his notes, probably, as a "Manual."

CAFONS (*William Grey*).—We know of no book upon this subject.

CHARACTERISTICS OF ANTWERP CARRIERS.—"I have a pair of young Antwerp Carriers about two months old, which are of a stone (or a mixture of red and slate) colour, rather small, scarcely any wattle. Could you tell me the characteristics of a good young pair? Are they as good for flying as any other? What are they mostly prized for?"—T. G.

[Antwerp Carriers are mostly prized for their sharp flying and extraordinary homing faculty, in which they excel all others. Pure Antwerps are very scarce. They resemble a small Rock Pigeon, thin beak, no wattle, forehead rather raised, eyes bolting, altogether a very wild appearance, plumage mealy or strawberry; black snatches are admired. The Short-faced Antwerps, or Liege Carriers (*Pigeons Smerles*), are a cross from the former and the Owl or Turbit Pigeons, and they strongly resemble the Owl Pigeon. Their plumage is either mealy, blue, or chequered. They are also first-rate homing birds. The cross-bred birds bred from the Short-faced Liege birds and the English Dragoon are much more common; they are stouter than the foregoing, and have a little wattle; colour various. "T. G." will find trying his birds the best test of their goodness.—B. P. BRENT.]

WEEKLY CALENDAR.

		WEATHER NEAR LONDON IN 1856.										
D M	D W	JUNE 2—8, 1857.	Barometer.	Thermo.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
2	TU	WHIT TUESDAY.	29.891—29.798	73—36	S.W.	—	50 a. 3	6 a. 8	1 29	10	2 20	153
3	W	EMBER WEEK.	30.017—29.957	77—39	S.W.	—	49	7	1 38	11	2 10	154
4	TH	Stonewort (<i>Chara tomento</i>).	30.108—30.046	75—45	W.	—	48	8	1 50	12	2 1	155
5	F	Prickly Stonewort (<i>C. hisp.</i>).	30.143—30.103	63—33	N.E.	—	47	9	2 4	13	1 50	156
6	S	Privet (<i>Ligustrum vulgare</i>).	30.253—30.189	66—46	N.	—	47	10	2 22	14	1 40	157
7	SUN	TRINITY SUNDAY.	30.282—30.218	73—45	S.W.	—	46	11	rises	☺	1 29	158
8	M	Enchanter's Nightshade.	30.203—30.178	72—52	S.W.	—	46	12	9 a. 53	16	1 18	159

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 71.0°, and 46.6°, respectively. The greatest heat, 90°, occurred on the 7th, in 1846; and the lowest cold, 35°, on the 2nd, in 1855. During the period 108 days were fine, and on 88 rain fell.

USEFUL GARDEN GRASSES.

FESTU'CA DURIU'SCULA.

(HARD FESCUE GRASS.)



THIS excellent lawn Grass is a perennial. *Roots* fibrous, and sometimes throwing out short lateral shoots. *Stem* about two feet high, erect, leafy, round, streaked, smooth. *Lower leaves* long, very slender, stiff, pointed, bristle-shaped from their sides being pressed together, and streaked; *upper leaves* broader and flat; edges and keels of all roughish, and all milky green. *Leaf-sheaths* close, smooth. *Stipules* very short, cloven. *Flower-head* an oblong unilateral panicle, much spreading when in flower, its branches being at an acute angle, pointing upwards from the stem, rough. *Spikelets* more

or less red, at first cylindrical, but becoming flattened as the glumes expand. *Calyx* sharp-pointed. *Florets* from four to seven in number, keeled, flattened, generally smooth, the uppermost often imperfect; the outer valve tipped with a straight, rough *awn* shorter than the valve; inner valve roughish at the marginal ribs, slightly cloven at the point. *Stigmas* cylindrical. *Anthers* purple, cleft at the ends. It belongs to the Linnæan class and order Triandria Digynia.

We have said that this is an excellent lawn Grass, and it is so, because the herbage is very fine, it thrives on almost any soil, becomes green early in the spring, endures well the drought of summer, bears a good colour even in winter, and throws up but few flower-stems. If it is prevented producing any of these stems, either by constant mowing or the pasturing of sheep, it becomes remarkably thick and carpet-like. When fed off by sheep its tufts sometimes acquire a curious hemispherical form, as is observed and pictured by the late Mr. Knapp in his "Journal of a Naturalist." He says:—

"Plate 2 represents the tufted head and entire roots of a Grass gathered from a down fed by sheep from time immemorial. It is probably that of the Hard Fescue (*Festuca duriuscula*), which, having been constantly eaten down by cattle, has never thrown up flowering-stems, giving out only radical leaves. These appear to have been cropped short as soon as they have sprung up, the less succulent and strawy portions only being left like a ball upon the surface, as a bush constantly clipped by the gardener's shears. The root appears to have annually increased, though the upper parts it was destined to nourish have been destroyed, until it became a lock of closely-compacted fibres, like a tuft of hair, six or eight inches in length. Furze bushes, growing upon many downs in Wales, Devon, and Cornwall, assume commonly the appearance of large, green, dense balls, every tender leaf being constantly shorn away by the sheep and rabbits that frequent those places, and present, upon a larger scale, the very appearance of these grass balls. Our specimens are rather local than general, and were the produce of the Malvern Hills."

The Grasses were much neglected by our earliest botanists, and this is not an exception. It is first mentioned as an English plant by Ray.

THE CHARACTER AND INFLUENCES OF THIS SPRING.

I do not mean to aver that we have had a most extraordinary spring on the whole, but that we have had a very awkward one to deal with; and when old practicals, in the full sense of that word, are puzzled, where shall the novice be found? Let me, then, point to such peculiarities as have presented themselves.

The main questions are these: what has it been to fruit trees? what its effects on the soil? The latter consideration concerns almost equally vegetables and fruit. To say that we have passed through a *blackthorn winter*, as the gardening folks in my earlier days used to say, is to tell folks, perhaps, of what they already knew. Although there have been somewhat low temperatures at times, say from 3° to 8° of frost—such has been the case here—yet I do not think that blossoms are much injured, excepting those of the Apricot and Peach. These, I fear, will be all but a failure. The chief feature in this case has been that the frosts were accompanied with much dryness in the atmosphere, and the amount of humidity present in frosts very frequently determines the degree of mischief to the vegetable world. I before spoke of the prevalence of easterly winds. This is quoted in round numbers, for they have danced about occasionally on each side of the eastern point; but an experienced gardener knows these winds by the smell, if I may use the term. And, indeed, I may say the same as to heat; the more experienced a man is in his profession the less he requires a thermometer. But one thing may be here adverted to, as concerning dryness in the air during March and April. In the midst of all our grumbling how few consider the benefits derivable from this purifying affair! The soil, day by day and hourly, is exchanging the stagnated moisture of a long winter for the constantly increasing air heat of a returning spring; and not only air heat, but the renewing effects of the gaseous matters which the air is known to contain. I never saw a more striking illustration of these great facts than of late, especially in Potatoes. I had only planted them about ten days before they were peeping through; and I may say the same as to several seeds recently committed to the soil. Surely it is plain to trace the cause of this. Those who have hitherto thought lightly on the subject of ground heat will do well to give such things a closer consideration.

The same as to our various vegetables. Lettuces, Cauliflowers, Cabbages, &c., although they looked very blue or bronzy during the “blackthorn winter,” yet let there be but a zephyr from the south-west and a night's soft rain, and behold the whole garden becomes a hotbed. My Vine borders have actually cracked with contraction consequent on the evaporation produced by the dry condition of the air; and I rejoice that they have done so, being assured that every fissure affords facilities for the entrance of warmed air. Indeed, I was so much more assured of the benefits derivable from an accession of ground heat, as far as a gardener's plans can facilitate it, that I pared the surface of the borders, and swept them clean afterwards, and I have no doubt that I have thus acquired more ground heat to the later Vines; indeed, they very plainly show it by an increased amount of luxuriance. As to our fruits in these parts I venture to predict a good season in general, unless we have an unusual amount of insect enemies. Apricots are much complained of, and Peaches have suffered considerably. I never knew the foliage to assume such a reddened and stunted appearance as it did through April. One feature I may note concerning Apples, Pears, Plums, and Cherries—the blossom, or rather, the corolla itself, has been of unusual size. This is probably owing to two causes combined—the partial

rest of last year and retarded development. Apples are a most abundant show, and no wonder. Last year they may be said to have rested, and their repose will necessarily have filled their systems with material for future crops. By the by, this resting, although not productive of much rental, is of more benefit on the whole than may be commonly considered. Indeed, if it were not for an occasional rest many trees would make a premature old age, and produce fruit small, insipid, and a pernicious tax on the trees which had to sustain them.

I may here observe as to Plums what extraordinary counties Cheshire and Shropshire are for Damsons. I conducted gardening operations for six years on Wimbledon Heath, near London, some thirty-five years since, and I have both planted Damsons and known them planted in various parts around the metropolis, and in the best of soils, but I never saw such Damson trees as are now within pistol-shot of my inkstand. This is a singular fact, and I should like to know if any experienced reader of THE COTTAGE GARDENER can account for it. Until others do I must attempt a solution of the mystery, for in my opinion it is of much importance to ascertain these things. I have always found that the unravelling a mystery of this description is a key to open other little difficulties. We all know that in most agricultural questions all the talk is about manures, tillages, subsoiling, &c. How seldom do we hear talk of atmospheric matters! And no great marvel either. The one is under command, the other in a great degree uncontrollable. This, however, admitted, we must not allow ourselves to be hindered from going further into the question. To come to the point, the Damson is known in hot and dry summers to assume a foxy hue; in other words, to become a prey to the red spider, and pitiful they look under such circumstances. A dry atmosphere always favours the red spider. Cheshire, or at least the Damson district, is, as all the world knows, a great cheese county, no doubt in great part owing to the general humidity of the atmosphere; and this, I think, is the key to Damson success.

We are at least assured that it is not a question of soil. Our nurserymen about London can cultivate the most difficult subjects from all parts of the globe, and it would be strange indeed if they could not make a compost for the Damson. I have seen in these parts Damsons thriving in clay soils, in others of a peaty character, and in light, sandy loams; in fact, plant them where or how you will, they succeed. But I must escape from this somewhat digressive affair and return to my subject.

In considering the influences of the spring on vegetation let me turn for a moment to in-door affairs—our glass houses. All the correspondence I have had with gardeners laments freely over the cloudy character of the past spring as to forcing. Herein is the great puzzle of gardeners: they can obtain sufficient heat, air, and air moisture, but they cannot command light; but so much improved is the modern management of hothouses, that little harm accrues under such circumstances beyond retardation. This is a high recommendation of British gardeners, and very frequently astonishes their professional brethren who have the advantage of the brighter skies of some parts of the Continent. Be it remembered, however, that they occasionally have a greater amount of dryness of climate, together with a higher degree of radiation, to contend against; consequently they are forced to employ stronger measures of an artificial character to counteract extremes.

Garden vegetables have been exceedingly slow in their movements, and, as Mr. Robson recently observed, they have encountered an unusual host of enemies. As for small seeds, as they are commonly called, such as Radishes, Carrots, &c., there will be many a faulty crop; but, strange to say, the Gooseberry buds escaped the hungry birds this spring in an unusual way, at least

here. How this happens I am at a loss to know; for the destruction of seeds germinating and of buds in a similar stage is generally in proportion to the severity of the winter, especially if of a protracted character.

Since writing the above nearly a week has elapsed, and in the interim we have had most genial showers, which were much wanted; and the consequence is such a change in the appearance of things as I have not witnessed for some time, the rains being accompanied by much heat. The Apples are magnificent, Plums also, and the Pears appear to be setting most liberally. All these things, however, are in these parts about three weeks behind the average of seasons, and this points unmistakably to the utility of retarding principles, which I have so frequently recommended as beneficial when skilfully carried out. R. ERRINGTON.

SPRING FLOWERS AND BEDDING PLANTS.

SIR EDMUND HEAD, the Governor of Canada, is expected to be in London about the middle of June, accompanied by Lady Head, and both of them have very extensive family connections at home, besides a vast strength in political ties, and, as all the relations of celebrated characters abroad read THE COTTAGE GARDENER, this would be a good opportunity for enlisting Sir Edmund and his lady in the new movement about spring flowers. They have the "run" of the best hunting ground in the world for such plants as are most appropriate for the English spring garden.

When I was last at Dalhousie Castle, on the South Esk, not far from Edinburgh, in 1827, I saw a very long border there which was brimful of Canadian plants, which were sent home by the then Lady Dalhousie, who occupied the same exalted station for some years before then which is now filled by Lady Head. I lodged with two of the University students in Edinburgh at the time, from whom I learnt that it was apprehended in the class-room of Dr. Grahame that Lady Dalhousie's contributions from Canada would swamp their Botanic Garden by the richness and rarity of the hardy collection in the long border aforesaid. Just at that time Douglas returned from his first mission to the west coast of North America. He and Mr. Donn, the celebrated botanist, went down to Edinburgh in 1828, when the first *Clarkia* flowered in Europe, and Douglas, being a most perfect master of the art of "setting off" new plants, soon turned the heads of the Scottish botanical students over the Rocky Mountains. All Europe soon followed, and kept up the excitement in favour of Douglas's discoveries till the bedding-out system was fairly established both in England and Scotland, and this system unhappily put down the Douglassian mania as fast and fearlessly as that "rage for the Horticultural Society's plants" had stemmed the tide of which Lady Dalhousie had opened the sluices.

The bedding-out system seems now to be so unalterably fixed in the heads and hearts of "our people" that we can find time to discuss the points and periods in the rise, progress, and decline of the "flowers of our childhood" in the mixed borders. Were it not for Douglas's plants and the bedding-out system coming upon us all at a time there is no doubt but our gardeners by this time would be perfect masters and managers of the American Flora; whereas, if we were to own the truth, we could not lay our hands on three gardeners in the three kingdoms who could even tell the names of one quarter of the herbaceous plants and bulbs from our "Canadian possessions" without taking botanical curiosities into the account.

I think Lord Elgin gave prizes, a few years since, for the best collections of specimens, or of drawings of

specimens, of Canadian plants by native artists. At any rate, one of the successful candidates for Lord Elgin's prizes, a "Canadian beauty," showed her collections of these drawings to your humble servant the year before last, and, although I had them more than a month, I could not make out one-half of them, and the best plant-men about London to whom I showed them were not a whit more knowing. Of course, if we had the book names we should all know them, or pretend we did, as we could talk enough about them; but the local Canadian names alone were given, so we could do nothing better with them than look knowingly over them and suck our thumbs.

Now, after this humiliating confession, and knowing that some of the finest spring flowers in the world come from North America, also the best hardy Ferns, may I not say that the time has arrived for procuring or re-introducing a grand selection of American herbaceous plants, that our gardeners may have an opportunity of studying them practically, and by their practice make them as familiar to all the garden people as Crocuses, Daisies, and Polyanthuses? You may depend upon it every one of them is as easy to grow and keep as a Crocus when we shall learn and know *how* to do it.

It was but the other day that I had to confess that I had not seen a *Trillium* worth looking at since 1831—they, too, are Canadians—but I might have seen the finest plant of them in Europe in this parish of Kingston, and I have just seen it; the kind is *Trillium grandiflorum*. When I saw it last week it had ninety-four full, open, large white flowers in one circular patch, which was thirty inches in diameter, and very probably the patch has not been disturbed for the last thirty or forty years; but I shall find out the whole history of it. I could give the name of the place, which is full of *exquisitums*, were it not that some ill-mannered people, far away in the country, would begin their bother by writing endless letters. I shall never forgive myself for the disagreeable bother I have occasioned to Mr. Walton by giving his address in connection with his Waltonian case. Mr. Jackson, sen., and Mr. Kidd, gardener to the Marquis of Breadalbane, saw that *Trillium grandiflorum* the same day. They also saw what I did not think could have been seen out of my *sanctum* conservatory—twelve-years-old Geraniums in pots. I have maintained all along that every kind of bedding Geranium, whether greenhouse, scarlet, horseshoe, ivy-leaf, or variegated, will improve by age, and, although I have known higher heads in this fancy throw all such old plants in my "teeth," and call them derisively by my name, I shall never alter the tune against very old Geraniums; but I had no idea that any one adopted the plan as a regular system with a whole collection of Pelargoniums—fancy, French, spotted, and bedding kinds—until we saw it that day in full play with an extensive selection of all these kinds. The dwarf pink ivy-leaf bedding Geranium, from seven to ten and twelve years old in 48 and 32-sized pots, and with stems as thick as the handle of an umbrella; Mangles' Variegated, another of the very slender kinds, equally strong, and no one knows how old; Globe Compactum, Salmon, Nosegay, Commander-in-Chief, Cerise Unique, Reidii, Princess Alice, Punch, Cherry Cheek, Mrs. Vernon, the first of the new Nosegays, and all the rest of the leading kinds, with Tom Thumbs of the first season it came out, all with handles or low stems as big as a walking-stick, and more easy to keep over the winter every year as they get older. For when aged the whole can be so hard pruned in the head and at the roots, in the autumn, as to keep in small compass, like so many dried bulbs, which plants, when turned out at this season, will begin to flower from the first joint, and no heat, or cold, or drought will hinder them, and such as them, from "filling up" at once; and, better still, no soil or situation is

ever likely to cause such plants to run too much into leaf, be the season what it may; whereas people who prefer young plants are obliged to keep to the naturally dwarf kinds like Tom Thumb, and thus cause a degree of sameness in large gardens which is perfectly tiresome to look at more than once or twice.

There is no variety in either the Verbenas or the Petunias; therefore in the flower garden six well-selected Verbenas will tell on the eye just as much as sixty kinds, and therefore, also, collections of Verbenas ought to be confined to the mixed border of Verbenas. All the best gardens ought to have such a border, and in it only will the best shades and tints tell well as a whole.

A Petunia border is not yet what it will be, but we are not far from the period when every gardener will save seeds of his best Petunias, sow them at the end of February, plant them out mixedly in May, and weed out those colours he dislikes as fast as the seedlings come into bloom, and his border in the autumn will be such as no one yet has dreamed about. Even on a small scale and in the most limited garden ten times more than at present might be done without more cost—merely a more systematic style of arrangement.

D. BEATON.

WINDOW GARDENING FOR SUMMER.

(Continued from page 115.)

10. *Plants that may be in Bloom in the Summer Months in a Window.*—In general, where there is only a window or two, I would confine the selection chiefly to Pelargoniums, Fuchsias, shrubby Calceolarias, and Balsams. Of the first I would select the fancy varieties, and of these again such common, but ever-flowering and sweet kinds as *Prince of Orange*, sweet; *Citriodora*, ditto; *Fair Helen*, oak-leaved and sweet; Rollison's *Crimson Unique*, *Sidonia*, *Spleenii*, *Jenkinsonii*, *Red Rover*, &c. For fine things select from an exhibition table. Of Fuchsias such kinds as have compact growth should be chosen, as *Globosa*, *Voltigeur*, and *Vanguard*, for darks; *Pearl of England*, *Duchess of Lancaster*, and *Clio* among the light ones. Of scarlet Geraniums for windows none are better than *Tom Thumb* and *Trentham Gem*.

As some, however, who have many windows would wish to have a good variety, I subjoin the following list of plants that may be in bloom where there is room for them:—

Shrubs.—Acacias, Cytisus, and Daphne until the middle of June; Pelargoniums, Fuchsias, Roses, Nerium oleander, Sollya heterophylla, Hibbertia grossulariaefolia, Wallflowers, Hydrangeas, &c.

Plants more Herbaceous.—Calceolarias, Campanula pyramidalis, Cinerarias, Bouvardias, Mimulus, Pentstemons, Petunias, Salvia patens, Lobelia splendens, &c.

Plants with Bulbs and Corms.—Anomatheca cruenta; Ixia aulica, &c.; Gladiolus Colvillii, pudibundus, alatus, &c.; Scilla corymbosa; Sparaxis of sorts.

Succulent Plants.—Aloe perfoliata, maculata, flavispina, nobilis, &c.; Crassula orbicularis, ericoides, &c.; Cereus flagelliformis, Russelliana, and Jenkinsonii; Echeveria coccinea; Epiphyllum Ackermanni, &c.; Kalosanthes coccinea and versicolor; Mesembryanthemum glabrum, tricolor, marginatum, versicolor, aurantium, capitatum, multiflorum, bellidiflorum, &c. Had we a large window or a small greenhouse, and little time to spare to look after plants, and yet wished such as would minister a great fund of variety and enjoyment, we should be inclined to patronise succulent plants only, alike for the grotesqueness of their forms and the beauty and diversity of their flowers.

11. *Arrangement of Plants in Rooms.*—It will generally be found most advisable to group the plants on the principle of contrast in colour, &c. Much of the interest, however, will consist in having the plants in harmony with the furnishing and decorations of the room. I have such faith in the influence of the beautiful and the refined in taste, that I hope to see the plants in our cottagers' and labourers' windows grown in pots and vases beautiful and artistic in shape. The clean-scrubbed red pot answers pretty well in such windows, where everything speaks of the absolutely necessary instead of the elegant; but hardly anything looks

more out of place than a clumsy red pot in a drawing-room or an elegant parlour, and where often the distinctive features of the plant are destroyed by the gorgeousness of the walls and furniture. Ladies who will arrange everything in their rooms in the most perfect taste will often disfigure the whole by sticking a green-painted deal stand in front of their windows, and on that stand place little red pots with plants, and set in red saucers. To make plants in a richly-furnished room distinctive features of interest in themselves, in harmony with, and not overwhelmed by the splendour of surrounding objects, Mr. Fleming of Trentham uses elegant boxes lined with zinc, and supplied with trellises at their back covered with Ivy, which grows in a shut-off end of the box. I need not here detail how the plants are put into the box, covered with moss, &c.; but it will be apparent that nothing in the way of a pot is seen, and the plants have a green background at once. When not wanted the boxes are turned out for the benefit of the Ivy. Useful as this mode is, I would just as soon have boxes, vases, &c., made of as costly material as you like, or of zinc, galvanised iron, &c., painted so as to be ornamental, and in these I would either place the pots out of sight or turn them out into soil at once. Plants grown in small pots could thus be easily managed, and if the pots were merely hid and covered over with ornamental moss a lady could shift and arrange them at pleasure. I need not suggest how, by means of a few little bottles hid, cut flowers could also be made to help the making up of a good effect.

12. *Arrangement for Effect Out of Doors.*—Here the same principle will apply. One step is gained in the right direction when, instead of the pots standing singly on the sill, they are either plunged or planted into a box, and the labour in either case is greatly diminished, for the sides of the box are a great protection from sudden changes of weather, and saves many a watering. How many a balcony in front of a nice house is disfigured by pots standing about without order or arrangement! Collect the plants in ornamental vases or baskets, group these in pairs if possible, and, whatever the colours you prefer, have Lobelias, Verbenas, Anagallis, ivy-leaved Geraniums, &c., hanging over their sides, and the most fastidious will be forced to own that in your case there is no clashing of harmony and fitness between the beautiful without and the elegant within.

R. FISH.

(To be continued.)

A FEW NEW STOVE PLANTS.

It has been remarked to me by various cultivators that a brief description of new plants really worth having would always be acceptable. In the course of my visits to various gardens and nurseries it is always an object with me to note down any plants that are new and ornamental; and, as the season is fast approaching when stove plants will safely travel, I have determined to look over my notes, and give briefly a popular description of the best plants that have fallen under my observation, commencing this week with

APHELANDRA LEOPOLDII.—A plant with dark green foliage, marked beautifully with regular lines of pure white.

APHELANDRA SQUARROSA CITRINA.—This charming plant has large, variegated foliage, with square spikes of transparent citron-coloured flowers appearing in autumn and winter.

BEGONIA OPULIFLORA.—The Begonias are a numerous tribe of deservedly-valued plants. This species has thick, smooth leaves, and is very bushy. The flowers are united in a cluster, resembling the snowball-like flowers of *Viburnum opulus* (Guelder Rose), but of a more delicate texture and purer whiteness.

BEGONIA SEMPERFLORENS SAUNDERSIANA.—The name *semperflorens* means ever-flowering, and is a correct one as applied to this pretty species. I saw a plant of it in the stove at Meersbrook, near Sheffield, belonging to the Misses Shore, on the last day of April this year, covered with bloom. It is of a compact habit, neat foliage, and bright crimson flowers.

BEGONIA SPLENDIDA.—I have not seen this plant in flower, but the foliage is particularly beautiful. The stems and leaves are densely covered with bright crimson, hairy down, making a very showy appearance all the year round.

CALYPTARIA HÆMANTHA.—A splendid new plant, producing racemes of large flowers of a bright scarlet colour. One of the finest plants ever introduced. It is yet scarce and dear.

CHÆTOGASTRA LINDENIANA.—Another fine new plant, with velvety leaves, and rich, red, fleshy corollas. Exceedingly beautiful.

EUPHARIS GRANDIFLORA.—A grand addition to our bulbous stove plants. The flowers are nearly five inches in diameter, very fragrant in the evening, and of a pure white colour. They are produced on a stout, round stem in a kind of umbel, sometimes as many as six in one umbel. This is well worthy of general cultivation, being of easy culture.

GONOCALYX PULCHER.—A bushy plant, with small, round, thick leaves, among which appear the flowers, which are of a bright red colour. The young shoots and leaves are of a fine rose colour, which adds greatly to the beauty of the plant.

HOYA GRANDIFLORA.—Java must be a country rich in plants: its stores seemingly are not exhausted. Here is a grand addition to the favourite tribe of Hoya. It is in foliage something like *H. imperialis*, the chief difference being in the colour of the flowers. In the latter species the flowers are a dingy, shining purple; but in *H. grandiflora* they are large, and of the purest white colour.

JACARANDA VELUTINA.—The foliage of this plant is of a beautiful velvety appearance. The flowers are bell-shaped, and of a fine blue colour.

LAMCOURXIA GRANDIFLORA.—This little-known, new plant has flowers nearly three inches long, of a velvety, bright scarlet colour.

LOCHERIA MAGNIFICA.—This may be called the scarlet Lily shrub. The flowers are three inches in diameter, with a tube two inches long. Colour a velvety red.

MANDIROLA LANATA.—A very curious and singular new plant, with large arched leaves. Flower of a clear lilac, delicately tinted inside the tube with violet. The leaves have their stems and under surface densely covered with a soft, thick down of a pure white colour.

MEYENIA ERECTA.—Though a new plant, it is so easily propagated that the price has fallen considerably. It is now in almost every collection. The foliage is small, and habit bushy; but the flowers are very large, and of a beautiful bluish purple. They are produced plentifully from the axils of the leaves, and are in shape like an *Achimenes*, but with a tube fully two inches in length. This is really a handsome addition to our stoves, requiring less heat than most of its compeers.

OUVIRANDRA FENESTRALIS (The Windowed Plant).—This is, perhaps, the most singular and beautiful of all plants. It grows in the swamps of Madagascar, where it is found growing just under the surface of the water, the flower only rising above the surface. It is of a beautiful rosy pink colour, and is very fragrant. The leaves are, however, the most curious and interesting part of the plant. They are, when fully grown, a foot long, and six inches wide at the widest part. They are beautifully pierced like rich embroidery; the holes of the embroidered work are arranged in long lines, and are separated by cross bars, which divide off the whole leaf into a series of parallelograms, thus seeming to be all veins and ribs without the green tissue between them; hence it appears something like a Gothic window without glass. The leaves, also, are continually throwing up to the surface bubbles of air. In cultivation it requires a warm stove, and should have a tank of warm water to grow in.

RONDELETIA ANOMALA.—A very desirable new plant, something like a *Bouvardia*. The flowers are produced at the ends of the young shoots in umbels, and are of a rich vermilion red, with a yellow eye. The orifice of the tube is quite filled with yellow hairs. It is a desirable addition even to this handsome tribe of plants.

SIPHOCAMPYLOS INFUNDIBULIFORMIS (Funnel-shaped *Siphocampylos*).—A dwarf species of considerable beauty. The flowers are long, tube-shaped, and of an orange and buff colour. Free to flower, and easy to cultivate.

TECOMA SPECTABILIS.—The genus *Tecoma* has been formed out of *Bignonia*. Many of the species are handsome climbers, with trumpet-shaped flowers. This species is, however, a shrub or little tree, with very large, noble leaves, and terminal heads of fine yellow flowers. The under side of the corolla, or flower-cup, is yellow. Altogether it is a fine ornament to the stove or warm conservatory.

THYRSACANTHUS RUTILANS.—I have already written about this plant, but have seen it frequently since, and it rises in my estimation greatly. As a winter and spring flowering shrub there are none to surpass it in beauty. The plant grows erect, has tolerably large, fine leaves, and long, pendulous racemes of scarlet flowers. It is now pretty common in collections; but whoever has a stove, and has not this plant, ought to procure one as soon as possible.

T. APPLEBY.

(To be continued.)

HEATING AND VENTILATING HOTHOUSES.

NOTWITHSTANDING all that has been said and written on the subject of heating and ventilating hothouses, it is far from certain that we have arrived at the true principles of the art yet; for, as these important agents must go on simultaneously, it seldom happens that the means adopted are equally favourable to both. Heating as a science has received more attention than ventilating, and several new modes have sprung up within the last few years. One of these recommended to heat dwelling rooms is said to perform its duties without the aid of a flue or other outlet, its inventor insisting that the apparatus consumes its own smoke. This may appear good news to the amateur who is unwilling to add an expensive heating apparatus to his greenhouse or vinery; but it is right here to warn him against adopting such a deceptive mode of applying heat as the one must be which consumes its own smoke. It may be true that a description of fuel may be recommended which produces no smoke visible to the naked eye; but it must be borne in mind that there are many invisible vapours far more poisonous than ordinary black smoke. It would, therefore, be prudent to be on the alert in not too readily sanctioning the use of these novelties. A lamentable case occurred a few days ago, wherein two persons lost their lives by sleeping in a room heated by a stove in which a patent prepared fuel was used in a stove without a proper chimney, which fuel the vendor insisted did not require a flue, the apparatus being said to consume its own smoke. The fatal results told too plainly how deleterious the gas must be which it gave off during combustion—far beyond that of ordinary smoke from a coal fire. Now, though we all know that there are certain kinds of effluvia emitted by marshes and other stagnant places which have an injurious effect on the human constitution, but which are, nevertheless, grateful to the great mass of the vegetable creation inhabiting their site, still the great bulk of noxious gases are equally fatal to both the animal and vegetable world, as has been witnessed over and over again by the deleterious effects the poisoned smoke of some chemical factory has on the surrounding crops,

as well as on the health of the inhabitants within its reach. Now, with such examples before our eyes, where even the sweetening influence of the open air could not ward off the evil, it would seem impossible for the inmates of a closely-confined apartment to escape injury even where those pernicious gases are in a much-diluted state, and, as all combustion requires an abundant supply of fresh air, it follows that such combustion cannot go on, and have the air in the sweet, pure state it was before consuming it; or, in other words, a so-called smoke-consuming apparatus must give off a description of heat much charged with gases produced by the change combustion has made in it. That these gases are injurious every one knows that has been in contact with charcoal burning in a close room, and all modes of heating a room or hothouse without a chimney or outlet for the fumes and vitiated air must be bad, even with the aid of these auxiliaries. Many close iron stoves are offensive, ordinary gas burners are unpleasant and unhealthy without a free outlet, and most Arnott stoves give an offensive smell to the atmosphere of a room when a good draught does not set in from the door to the chimney. All these and other instances may be adduced as proving that the system of using any other mode of heating but that which gives a free circulation of air is bad, and ought to be avoided.

Various modes of heating hothouses have been adopted during the last few years with varied success, and it is probable that some better mode still may ere long be discovered that will give greater circulation to the air than any that is now in existence. At the present time by far the greatest number of structures are heated by hot water or smoke flues of some sort or other, and ventilation is mostly effected by outlets at the top and bottom of such buildings; but, as the major part of such structures are closed at the time when fire heat is most applied, it follows that the heat given off has a sluggish character, more especially from hot-water pipes or tanks. Now, this is the great defect in hot-water heating in my thinking, and if it could be remedied so much the better. A limited ingress of external air entering at the lowest point and passing over the hot-water pipes is the best mode at present known to create a circulation, but this is certainly open to much improvement. The heating properties of hot water are certainly as good as need be, but something must be contrived to give a greater circulation to the air, and consequently to the heat. Letting in large quantities of cold air at bottom, and letting out the heated portions at top, will, of course, maintain a proper circulation, but it is at a great waste of heat. It would therefore be better if we could give motion to the air in a hothouse without exchanging it, by making it revolve around the building, and finally pass over the heating place again. If this could be carried into effect we should have little to complain of about hot water, and we do not despair of its being so.

Polmaise heating is but an improvement on the old flues in this respect, only that it gives a greater circulation to the air inside the house by the continuous stream which is made to pass over the heating apparatus; in fact, a well-constructed Polmaise apparatus that works well and safely is unquestionably the best mode of heating I know of. Observe, I make the qualification "when it works well," which it does not do in every place, and has been abandoned in many instances; but I lately visited a place where it was in excellent working order, and nothing could exceed the health and good appearance of everything inside the hot pit to which this mode of heating was applied. Cucumber plants in the first week in January looked as well as they generally do in May, and other things equally good. In this case the circulation was so perfect that a visible motion was given to the leaves of the plants inside, the doors and ventilators being all closed, the air of the house being

kept in continuous motion by being obliged to pass over a heated apparatus, and, travelling along a sort of flue underneath a bed in the centre of the house, was let out at various places along the side of the bed; but a large portion reached the extreme end, about forty feet from the fire, and near to which were the openings in the floor of the pathway communicating with the return air-drains to the heating apparatus, the heating apparatus being mostly, or rather wholly fed by air drawn from this source, and, as the expansive powers of heat urge on the continuous stream of air coming in contact with it, a circulation is kept up which is even perceptible to the feel of the visitor. That this circulation is healthier than the dull, stagnant heat arising from hot-water pipes and other sources I think every one will admit, but the great drawback is the liability such things have to go wrong, even when they are placed under the care of those wishful of making it answer. Added to this, I believe the apparatus is rather extravagant in the quantity of firing required. Waiving these great drawbacks, which, by the by, may in time be remedied, and then we have a great improvement in heating; for not only is this system adapted to hothouses, but it is also applicable to dwelling rooms of all kinds, the heating of a large mansion near here having been successfully accomplished on this plan after all other modes had failed to do so satisfactorily.

Now, this is a fact worth noticing, and I have no doubt but some modification of the plan will in time be adapted to garden structures free from the defects of those already in existence. A circulation of pure air has been at all times an object of the greatest importance to all public buildings of general resort, and various have been the means adopted to heat them. The loftiness of churches generally renders them more difficult to heat than to ventilate, especially in those where no contrivance for heating was thought of at the building of the edifice, and the whole work left to be done by some Arnott or other stove stuck in the centre of the principal aisle or passage. This state of things has not improved in every new case brought before the public in the last few years, although we have had no lack of inventions bearing that way. Some eight or ten years ago, or more, the mode of ventilating recommended by Dr. Read was strongly advocated, and several public buildings were furnished with his appliances for effecting that object, which, from what I could learn of the matter, were diametrically opposed to all other modes heretofore adopted. I believe Dr. Read's system to have been to convey the heated air to the highest part of the building, where a perfectly airtight chamber received it, and it was thence made to descend to the base of the building, to be again heated to warm the building or room in which it circulates, and continuing the same process again, renewed only by such accessions of outward air as would find their way inside by means of the doors and other openings, the windows being closely glazed and fastened down. Whatever benefits there might be in this plan in winter there were certainly great disadvantages attending it in warm weather, as I well remember one of our judges of assize suffering, as well as a crowded court, from the heat, directing the windows of the court house to be opened, but was told it could not be done, as by Dr. Read's instructions they were all closely nailed down. His lordship, however, soon got over that difficulty by directing the glass to be broken. The wands of the mace bearers and other things speedily created an opening, through which the heated and vitiated air was expelled, much to the satisfaction of the whole court, who, it is needless to say, applauded the summary act of the worthy judge. Though plants, like human beings, require a continuous supply of fresh air, yet there is not so much necessity to have large admissions of

cold, frosty air to supply the place of that already heated in a hothouse. The consumption is certainly considerable amongst plants; still there is always some which finds its way inside, by the door or other outlets, sufficient in very cold weather to keep the interior sweet, that it is not necessary to admit more unless the structure be small and very much crowded, in which case fresh air must be given, taking care to warm it first by making it pass over the heating apparatus.

Much more might be said on this head, but I will here merely sum up with a direction to the inexperienced in building hothouses to make openings at the lowest part near the pipes or flues for the admission of fresh air, which, being heavier than when warm, rushes in rapidly, and, having to pass over the heating apparatus, becomes warmed ere it circulates amongst the plants. Observe, these openings must be lower than the pipes or flues, for if higher the probability is that the heated air would escape, instead of the cold being admitted. A small opening of this kind might exist with advantage in all hothouses, and at all times; for even in midwinter it might be opened, and the heated particles would find their way out without opening the lights at top, for few structures are air-tight at top, neither ought they to be so.

J. ROBSON.

NOTES FROM THE CONTINENT.—No. 4.

BERLIN.

THERE is an old saying which tells us that "tis an ill wind that blows nobody good," and we may, with truth, paraphrase it and say, it is indeed a bad soil that is not adapted for the growth of some tribe of plants; and so we find that in the dry, hungry sand about Berlin, in which a gardener would at first despair of growing any plant to perfection, the *Hyacinth* and other bulbs grow and thrive. My attention was first drawn to the fact by the number of these flowers which have for the last few weeks been exposed for sale in the markets, and the cheap rate at which they were sold. A good bunch of various colours could be obtained for less than an English halfpenny. I soon found that beds of them were cultivated in every little nursery, and Berlin abounds in small florists' gardens, although there are none that can be said to stand in the first rank, such as that of Veitch or Van Houtte. Many of these gardens are situated just outside the town, through the Frankfort Gate; they are separated from the road only by a low hedge, and in many cases there is not even that, so that a person walking in that direction has a good view of them. It was a beautiful warm day when I went. The singing of the larks overhead, the perfume which filled the air, and the great beds of bright colours of every shade, from pale pink to deep crimson, from sky-blue to purple closely bordering upon black, with the brilliant yellows and scarlets of the Tulips, combined to make it one of the pleasantest walks I ever enjoyed. There appeared to be among these bulbs no novelties which are really better than those at present grown in England; but I fancied the whole of them seemed brighter and their colours more fully developed than I ever saw them in English gardens, which was no more than might naturally be expected.

Berlin claims the honour of having originated that taste for fine-foliaged plants which has added such a distinct feature to the exhibitions of late. Whether this claim be legally founded or not, certain it is that comparatively less attention is paid to flowering plants, and more are grown for the sake of their foliage than in England. Hence the popularity here of all the family of the Palms, many of the *Dracænas*, the New Zealand Flax (*Phormium tenax*), some of the larger-leaved Aroidaceous plants, and the like. In every little florist's or nursery garden, however small, you are certain to see a few plants of some of the commoner species of *Chamædorea* and a few Date Palms, while a dark corner is always filled with the large and curiously punctured-leaved *Philodendron pertusum*, or the no less noble *P. pinna-tifidum*. This taste appears to be shared by all classes of

the people. It not only characterises the conservatories of the rich, but also the window gardening of the poor. The plants most commonly seen in cottage windows are not *Geraniums* and *Fuchsias*, but Ivy trained over a trellis, *Dracænas*, and the India-rubber plant (*Ficus elastica*). It is worthy of remark that Rhubarb is grown here, in most cases, simply as an ornamental plant, and without the least reference to its edible qualities.

One of the prettiest *bouquets* I ever saw was one which I noticed here the other day. It was made upon what is here called the Parisian plan, that is, circular and quite flat. In the centre was a white *Camellia*; then came a circle of purple *Hyacinth* flowers (these blossoms were striped from the stem, and each attached to a piece of fine wire); between each of these flowers was a very small sprig of the delicately-scented and Heath-like foliaged *Diosma ericoides*; then came circles of crimson, white, and pink *Hyacinths*, each treated in the same way, with the sprigs of *Diosma* between each flower. The whole was surrounded by that most delicate and graceful of all the Ferns, *Adiantum cuneatum*, lying upon each frond of which were a couple of spikes of the bright blue *Scilla bifolia*.

In every fruit stall in Berlin, among the oranges and apples, is to be seen a basketful of the dry, sweet pods of the St. John's Bread, or Locust tree (*Ceratonia siliqua*). They are imported from the Levant. I believe no other use is made of this fruit in England than that of fattening cattle, for which purpose it bears a high character.—KARL.

OBSERVATIONS ON THE PROPAGATION OF BUNT (*Uredo Caries*, D.C.), MADE WITH AN ESPECIAL REFERENCE TO THE POTATO DISEASE.

By the REV. M. J. BERKELEY, M.A., F.L.S.

IT has been known for many years that the principal diseases of cereal plants, such as rust, bunt, mildew, &c., are of vegetable origin. Unger attempted to overthrow this notion, and to prove that they were mere exanthemata, analogous to eruptive diseases in animals. The observations, however, of Corda, Léveillé, and others, have now completely established the fact that the productions in question are not mere modifications of the cellular tissue, but that they spring from a distinct mycelium, and are as certainly vegetable as any other fungi. It was long since also ascertained by Bauer that one of them, viz., bunt, could be propagated with certainty by rubbing the grains of wheat with the spores, and the practice of steeping wheat previous to its being sown, whether founded on more or less correct notions of the nature of the disease, a practice seldom neglected with impunity, is in accordance with his experiments. As regards the mode of propagation of these diseases the most vague and ill-founded notions have prevailed, the more general opinion being that the reproductive organs themselves were absorbed by the spongy tissue of the roots, or by the stomata, and so traversed every portion of the plant by means of the intercellular passages, or rooted in the tissue at the base of the stomata. It has not in general been understood that those bodies which, as far as has been observed, are the only ones destined to produce mycelium, are far larger than the intercellular passages, and frequently than the individual cells, or even the stomata themselves. The figure given by Bauer of the contents of the spores of *Puccinia graminis* is not correct, as may be ascertained by actual examination, or by comparison of Corda's admirable figure. The spores, in point of fact, contain merely a grumous mass, with one or more oil globules, and by no means distinct sporules, as supposed by Bauer.

Now, whatever may be the cause of the disease in Potato tubers, I look upon it as matter of absolute certainty that the destruction of the aerial portion of the plant is due to the development of *Botrytis infestans*. The notion that it is a mere consequence of a previously diseased condition is, I firmly believe, quite untenable. It becomes then matter of interest to ascertain, if possible, the conditions under which such parasites are developed. Probably from the lateness of

the season, when my attention was more particularly called to the subject by a communication from the Irish Commissioners, I did not succeed in 1845 in making the spores germinate, though M. Decaisne informs me that he found no difficulty in doing so. They germinated, however, readily enough in the summer of 1846. My attention, indeed, was turned more particularly to the point at an earlier portion of the year, when it was difficult to get more than one or two infected leaves, and even had it been possible to collect the spores in any quantity, experiments seemed more likely to give a speedy result if directed to some cereal parasite, such as bunt. The spores are of a peculiar structure, of sufficient magnitude to be easily observed, and the mycelium produced of considerable size, and as the disease was to be developed ultimately in a particular organ, to the production of which the ultimate energies of the plant were directed, there seemed a good chance of being able to observe the progress of the mycelium. I hoped then to ascertain whether the actual penetration of the mycelium into or amongst the tissues of the plant were necessary, or whether the grumous contents of the spores, if circulated amongst the juices, might not be sufficient for its propagation. The latter notion had been lately advanced as a mere theory by Dr. Greville, and I felt inclined to believe, from various observations and considerations, that there was some probability at least about it. The importance of obtaining, if possible, correct information on the point is at once obvious.

Having determined then to direct my attention to bunt especially, I procured as good a sample of wheat as possible, and divided it into two portions, washing the one carefully, and then sowing it with every precaution, that there should be no contact with any of the spores of the bunt with which I was experimenting; the other portion was steeped in a thick mixture of bunt and water, a portion of the black liquor being poured on the surface of the soil after the impregnated grains were sowed; the progress of the grains and spores was then daily examined. The clean wheat sprang up as usual, but there was soon an evident difference in the infected grains, a difference which was distinctly visible till the ears were perfectly developed, when every infected plant was bunted, while from the unimpregnated seeds not a single bunted ear was produced. In one of the bunted plants not only the ear was diseased, but there was a streak of bunt upon the stem, in which the fetid smell and peculiar structure were not to be mistaken, a circumstance which I have never before observed, nor am I aware that the fact has been noticed by others, and confirmatory of the opinion that the disease is not a mere alteration of structure in the grains of fecula, were such testimony wanted.

Four days after sowing I found that the spores of the *Uredo* had been sucked in, doubtless by capillary attraction, between the young root and its investing membrane, which was ruptured, germination at that period having scarcely taken place. The spores were quite as large as either of the two distinct series of cells of which the young root is composed.

Three days later I perceived the first traces of germination in the spores. A little obtuse tube thicker than the pellucid border of the spores, in a very few instances only, and appearing like a short peduncle, scarcely so long as their diameter, was protruded through the external membrane. This surprised me extremely, because on the mass of spores, whether on the surface of the soil or on the grains of wheat, there was a white, very delicate, extremely short down. On a closer examination the greater part of the grains of bunt were found to be clothed on one side with fascicles of white filaments, from two to four times longer than the diameter of the bunt spores, and producing towards their apices extremely long and slender, somewhat curved acuminate multiseptate spores.

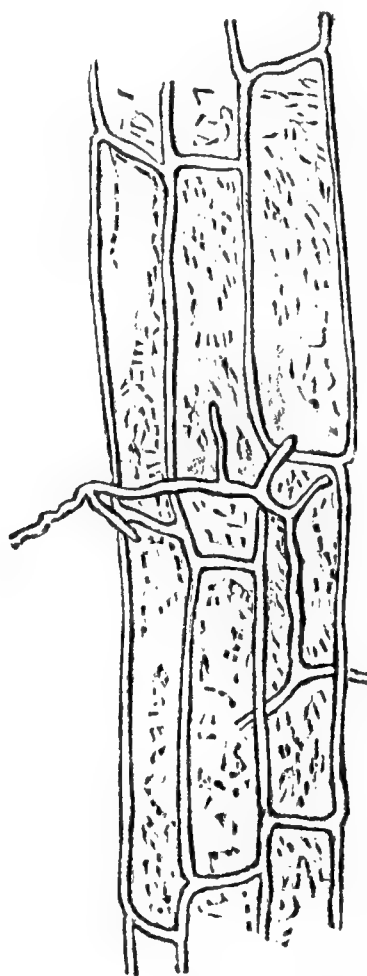
Three days later a large portion of the grains of bunt were ruptured, either irregularly or in a stellate form; a few more had germinated, the filaments being evidently protruded from the internal membrane, and either straight or curved, and occasionally branching off in two opposite directions, the tips of the threads being in all cases very obtuse, and many times larger than the intercellular cavities of the tissue of the roots.

The parasite, meanwhile, had undergone a very curious change, the spores being no longer separate, but connected

with one another by one or more short transverse tubes, exactly as in the threads of *Zygnema*.

Two days later many more of the bunt-spores were ruptured, and the mycelium more elongated; and, after three more days, the parasite was vanishing, and scarcely visible any more *en masse* to the naked eye, while the mycelium had increased to the length of six or more diameters of the spores. The young infected wheat plants were now evidently diseased, the sheaths and base of the leaves looking crumpled, and spotted either with white or brownish specks, and the whole appearance less healthy than that of the unimpregnated plants.

The diseased sheaths were now, in most cases, full of mycelium, but no such appearance was visible in the healthy state. Though the disease had evidently commenced, it is to be observed that the tubes protruded by the spores were but slightly developed, and that, though the utmost pains were taken, I could trace no connection whatever between



Tissue of diseased sheaths traversed by mycelium 15 days after inoculation.

these and the diseased tissue. There was not the slightest doubt as to the fact that the two sets of wheat plants exhibited quite a different appearance; and my own observations were confirmed by several practical men who saw them. It is of course incapable of proof without tracing the connection of the internal mycelium with that produced by the spores, that the two were really derived from the same origin; but as the peculiar appearance was exhibited only by the impregnated plants there is a strong presumption as to identity. All the plants were afterwards more or less infected with *U. Rubigo vera*, which appears to be the infant state of *Puccinia graminis*, and which afterwards was developed, and there would of course then be matter of doubt to what fungus any observed mycelium might belong.

In a single instance only, ten days after the first appearance of disease, in examining some little white specks which appeared on the leaves of the bunted wheat, I saw a curved filament passing through one of the stomata, but whether from the outside to the inside, or the contrary, I cannot say. The mycelium in these white specks was not abundant, but thicker than the walls of the cells.

In a month from the sowing of the wheat, the fecula of the grains being then nearly absorbed, it was difficult to find any spores, and no further development of mycelium, directly from the spores, had taken place.

The first bunted ear appeared four months from the time of sowing, and while every impregnated plant produced bunted ears, not a bunted grain appeared on the plants which sprang from uninfected seed.

The experiments were repeated with precisely the same

results. In a single instance the parasite was developed on the tip of the tube protruded from the germinating bunt-spore. It should seem then, as far as may be concluded from the observations noted above, which I am ready to

confess should have been more varied to lead to any certain result, that a penetration of the mycelium directly protruded from the spores of fungi is not always necessary for the development of the fungus, but it is probable that the grumous contents of the spores are imbibed by the plant which is destined to be the prey of the parasite, and that these, circulating with the juices, carry the principle of disease to every part, and under favourable circumstances are capable of reproducing the parasite.

To establish a point of such delicacy would require ample leisure and very varied observation; but there are few subjects more likely to reward the observer, either directly or indirectly, with new and valuable results.

Should it prove true, there would no longer be any surprise how a disease originating in the leaves might be propagated through the stem to the tuber, or the contrary, and Martius' or Morren's notions of contagion would no longer be regarded as mere reveries of fancy. It is indeed opposed to the general notion that no reproduction takes place except by the separation of a cell from the parent stock; but, as knowledge increases, too many of our most favourite and general notions are overthrown to justify us in being diverted from research, through the mere stumbling-block of preconceived opinions.

There is another direction to which observations also may be led by the subject. The production of the parasite on the spores of bunt was constant in my experiments, and was repeated at Bristol and Clifton under the eyes of Mr. Thwaites and Mr. Broome, to whom I had communicated bunted grains of wheat, for the express purpose of seeing whether the same circumstances would take place at a distance. I was at first inclined to think that it had something to do with the reproduction of the bunt; and it is quite possible that in plants, as well as in the lower animals, there may be an alternation of generations. This is, however, merely thrown out as a hint which may be followed out by those who have fewer avocations than myself. Many anomalous appearances, amongst Algæ especially, seem to indicate something of the kind.

It remains only to characterise the parasite on the bunt, which is certainly quite new to science. It would be easy to form a new genus, from the circumstance of the spores ultimately conjugating; but as this does not seem connected with the reproduction of the species, and the other characters are altogether those of *Fusisporium*, I shall place it in that genus. The characters then will stand as follows:—

Fusisporium inosculans; minutissima, fasciculata, alba; sporis longissimis incurvis vel flexuosis multiseptatis demum conjugatis.

Hab. in sporas germinantes Uredinis Cariei, D.C.

It forms extremely minute white tufts, visible to the naked eye only where the spores on which they grow are thickly spread. Threads at first simple and erect; rather obtuse, soon forked above, and producing much elongated fusiform, multiseptate, curved or flexuous acuminate spores, which ultimately contain globular sporules, or nuclei, at length connected with one another by one or more short transverse tubes.—(*Horticultural Society's Journal*.)

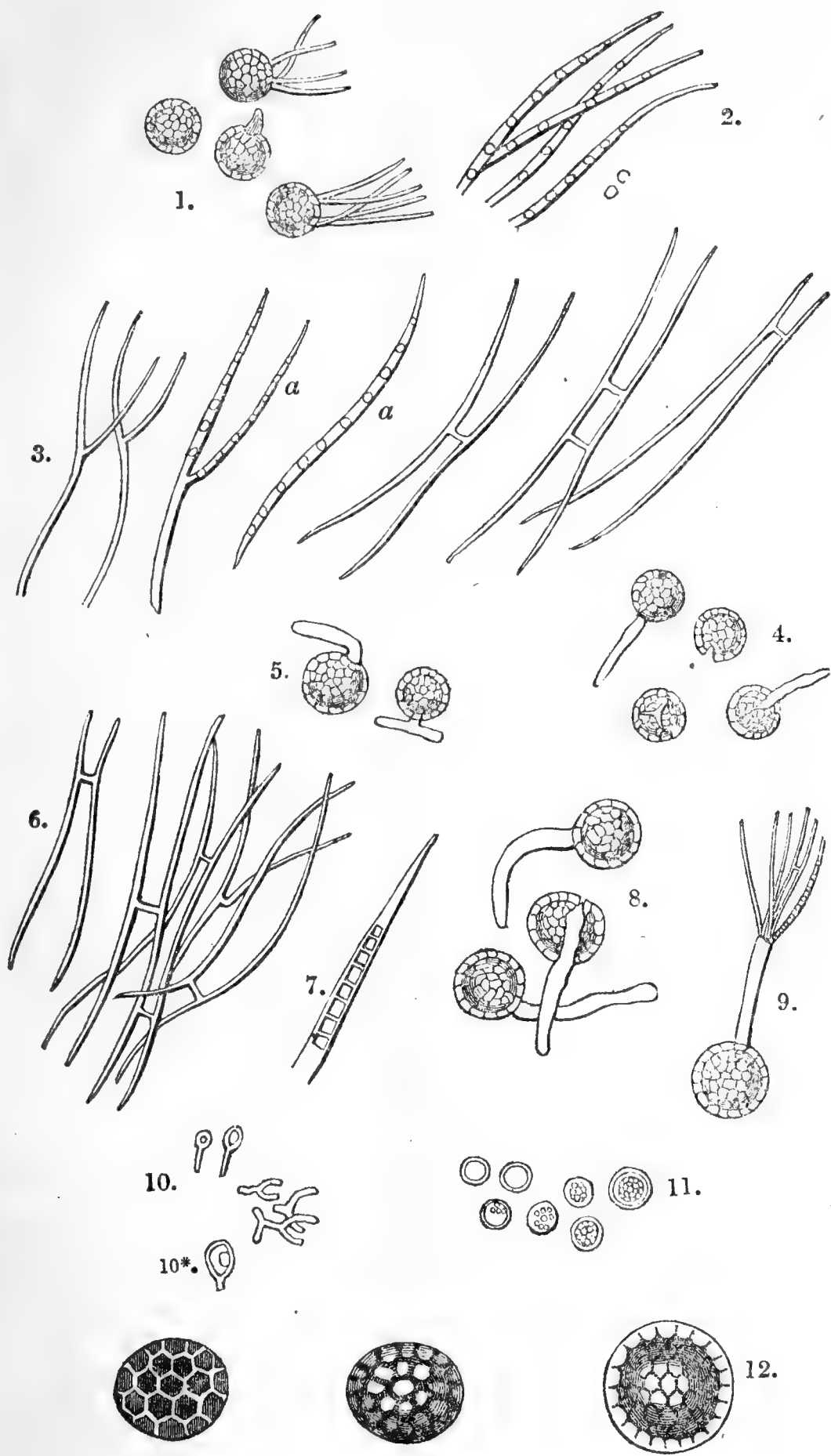


Fig. 1. Spores of bunt seven days after sowing. One is still in its natural state, another germinating, and two crowned with a fascicle of the parasite (*Fusisporium inosculans*).

Fig. 2. Threads of the parasite more highly magnified, filled with globules, two of which are free.

Fig. 3. Various views of the parasite and its spores, three days later, magnified. The spores of the parasite are fully developed, and once or twice conjugated. The globule-bearing thread and spore, marked *a a*, are more highly magnified than the others.

Fig. 4. Spores of Uredo at the same date; two with the germinating thread more elongated; one ruptured and empty, and another with the disc split in three directions.

Fig. 5. Spores of Uredo two days later; in one the germinating thread gives off a branch on either side.

Fig. 6. Spores of parasite of the same date conjugating with each other.

Fig. 7. Portion of spore of parasite more highly magnified.

Fig. 8. Spores of Uredo three days later; the germinating thread elongated. The parasite now very scarce.

Fig. 9. Parasite produced on the germinating thread of Uredo in an experiment made some days later.

Fig. 10. First appearance of spores in the diseased germen, with the mycelium.

Fig. 10*. One of the spores more highly magnified.

Fig. 11. Gradual development of spores.

Fig. 12. Three views of perfect spore, by Mr. Broome, as seen at different focal lengths.

VEGETABLE CULTURE AND COOKERY.

CELERIAC.

THIS is also called *Turnip-rooted Celery*, and the large-swelling root is used as an ingredient in soups and salads.

The seed should be sown in the open ground, on a bed well worked and pulverised, in the end of March and beginning of April, and when the plants are two or three inches high they are to be thinned out to about four inches apart. When six inches high they are to be transplanted to a piece of well-prepared, rich ground, and put out six inches apart in drills, which should be six inches deep. As the roots attain a pretty good size earth them up on each side to make them white and tender, and in about six weeks they will be ready to use, either boiled in soups or raw in salads.

CELERY.

Of the many varieties of Celery which modern gardening has produced the best we know of at present are *Seymour's Red* and *White* and *Cole's Red* and *White*. There are, of course, other varieties always making their appearance, which are no doubt equally good, but these we know so well as to be able to recommend them.

Celery is raised from seed, which, for the *earliest crop*, is sown on a slight hotbed in the first week of March, and thinly covered with fine, light mould. When the plants are two or three inches high they are to be thinned, and pricked out on another bed at a distance of three inches apart, and covered with hoops and mats, or with frame lights, to protect them from the weather. In the first or second week in June they will be ready to plant out in trenches; and in July, when the plants have made a considerable growth, they may be earthed up to blanch, to the height of three or four inches; this operation to be repeated about every successive week till ready for use.

For a *succession crop* the seed should be sown in the middle or end of March, on a light, warm, rich border in the open ground. When the plants are large enough prick them out as before directed, and when sufficiently advanced plant them out in trenches.

For the *main crop*, to come into use in the autumn and last during the winter, the seed is to be sown in a warm situation, on a light, rich soil, in the middle or end of April, and covered about a quarter of an inch with finely-sifted mould. If the weather is dry occasional waterings should be given till the seeds have vegetated, and a slight protection should be afforded the young plants on cold nights. When they are three inches high prick them out on a piece of well-prepared ground till they have acquired sufficient strength for planting out in July. The trenches are to be a foot wide and six inches deep, with a quantity of manure dug into the bottom. The plants are to be put out along the centre of the trench six inches distance from each other, and watered till they are established. As they grow, they are to be earthed up a little at a time, care being taken that none of the soil gets between the leaf-stalks. The earthing up may be continued all through the remainder of the season; but this is to be done gradually, otherwise the plants will be buried instead of earthed up, and their growth will be checked. In forming the top of the ridge it should always slope away from the plants, so as to carry off the rain, which, if allowed to run into the stalks, would cause decay.

In blanching Celery a very good practice is to bind it round with haybands before earthing it up; and we have also seen common drain tiles placed round the plants to prevent the soil from coming in contact with them.

Besides the usual modes of using Celery as a salad and an ingredient in soups, the following will be found acceptable:—

CELERY STEWED.—Wash the heads and strip off their outer leaves; either halve or leave them whole, according to their size, and cut them into lengths of four inches. Put them into a stew-pan, with a cup of broth or weak white gravy; stew till tender, and add two spoonsful of cream, a little flour and butter, seasoned with pepper, salt, nutmeg, and a little pounded white sugar, and simmer all together.

CELERY FRITTERS.—Cut the Celery into pieces three or four inches long, and boil it till tender in water seasoned with a very little salt. Drain the pieces well, and lay them

separately to cool on a dish. Make a batter in the proportion of three well-beaten eggs stirred into a pint of rich milk alternately with half a pint of grated bread crumbs or of sifted flour. Beat the batter very hard after it is all mixed. Put into a hot frying-pan a sufficiency of fresh lard, melt it over the fire, and when it comes to a boil dip each piece of Celery *twice* into the batter, put them into the pan, and fry them a light brown. When done lay them to drain on an inverted sieve, with a broad pan placed beneath it; then dish the fried Celery and send it to table hot.

CELERY SAUCE.—Wash and pare a bunch of Celery, cut it into pieces, and boil it gently till it is tender; add half a pint of cream and a small piece of butter rolled in flour, and boil it gently. This is a good sauce for fowls of all kinds, either roasted or boiled.

STAMFORD FLORAL AND HORTICULTURAL SOCIETY.—Arrangements have been made for this Society to hold their first Show in the open air, and it has been definitely determined to have the Summer Show on Wednesday, July 15th. Every exertion will be made to put the Society on a first-class footing, and with this intent a Silver Cup will be offered for Roses, and an appropriate Silver Medal will be struck and given for certain productions. The schedule has been remodelled, and the prizes, which will be open to all England, considerably increased. In addition, the patroness (the Marchioness of Exeter) has kindly consented to offer a prize for Ladies' Bouquets, upon the same principle as the one which has proved so advantageous to the Rockingham Show. The grounds so liberally offered by O. Edmonds, Esq., are admirably situated for the purpose, being immediately opposite Rutland Terrace; and it is expected that with the three lines of railway running into Stamford having special trains on the day, and with the other attractions presented, exhibitors and visitors will be brought in great numbers from different parts of the country.

ON THE DEPOSITS IN THE CELLS OF BEES.

In our observations at page 39 on Queen Bees and Royal Jelly we forgot to notice a brownish substance sometimes found at the bottom, or rather, the top of the queens' cells. Our attention was called to that some years back, and we sent a cell in which there was some of the substance to Dr. Fyfe, professor of chemistry, Old College, Aberdeen; but having lost his note we cannot state with certainty his reply. We recollect, however, that he said something respecting the substance not melting in boiling water, and giving out a resinous vegetable odour when tested by fire. As this agreed with our previous knowledge of the properties of propolis we were led to think that the substance was merely the excrement deposited by the grubs, or rather, perfect insects, when confined in the cells, with, perhaps, a little of the wax-like substance of which the cells are formed, similar to the deposits formed in the combs of hornets and wasps. There are certainly very few traces of such matter found in the cells of other bees; but in this case the deposits are only from the larva, which may be absorbed, or the cells may be oftener cleaned out to receive fresh eggs. Still we think that some little *crust* substance may be seen in them when examined before the brood has left in the usual way.

Since the above was written we find that "A COUNTRY CURATE," at page 75, mentions that he is startled at what we said connected with this subject at page 39 already noticed. He wishes to know "what is the nature of the dark acid substance" of which we have been speaking, and inquires "why this substance is never found in any other cells."

We trust that what we have already stated on this subject will suffice, although it is given at second hand. We need, then, only advert to our *ipse dixit*, or what we said. As Mr. Golding used the word "fudge" in a friendly note perhaps we should not have made use of it; but his cha-

racter both as a worthy man and a good apiarian is so well known, that such an expression cannot affect him. He was Dr. Bevan's confidential friend when he wrote "The Honey Bee." Besides, his own excellent treatise on these subjects is no "fudge."

As regards the Latin phrase, we may quote the well-known saying among the Scotch, that one should think thrice before he speaks once, and if those apiarians who seem to have more faith in the Royal Jelly theory than our excellent correspondent under notice were to follow that rule they might see the absurdity of believing that food is placed at the bottoms, or rather, the tops of the cells; for when the grubs advance in growth how could they turn round to eat? Besides, if they could, then they must eat a mixture of their own excrements. It is well known, however, that the bees feed their larva, and often the young queens, in the cells after they are perfect insects.—J. WIGHTON.

NEW BOOK.

THE REASON WHY.*—There are two very difficult things to do clearly, whether we are conversing or teaching—namely, to give a good definition, and to give a correct explanation of the cause of any phenomenon. Every one knows Sea-kale, but to define what Sea-kale is to a person who never saw it would be puzzling to one not intimate with botany; and it would be equally difficult, if not more so, for any one not having a knowledge of chemistry to explain *why* that Sea-kale is green when growing in the open air, and white when grown under a blanching pot. The admirable little volume we have named helps to a very large amount of such knowledge, and it is imparted in that kindly tone and religion-tinted spirit that must make it doubly welcome to every one who feels and would convey to others the force of this admonition of the wise king: "Say unto wisdom, Thou art my sister; and call understanding thy kinswoman."

The two extracts we subjoin will give a just idea of the contents of this most instructive and most amusing work.

"THE FLAME OF A CANDLE.

"Why does the lower part of the flame of a candle burn of a blue colour?—Because the *hydrogen* of the tallow, having a stronger affinity for the *oxygen* of the air than *carbon* has, ignites first. Pure hydrogen burns with a bluish flame.

"Why does the middle of the flame look dark?—Because it is occupied with gaseous vapours, derived from the tallow, which have not yet ignited.

"Why does the upper part of the flame produce a bright yellow light?—Because it is in this part of the flame that the *hydrogen* of the candle and the *oxygen* of the air combine, and there is just sufficient *carbon* mixed with the *hydrogen* to improve its illuminating power.

"Why is there a fringe of pale light round the upper part of the flame?—Because some of the *carbon* escapes in a state of *incandescence*, and as soon as it reaches the air it combines with *oxygen*, and so forms *carbonic acid gas*.

"Why does the flame terminate in a point?—Because cold air rushes towards the flame in every direction, and is carried upward. At the point where the flame terminates the cold currents have so reduced the temperature that combustion can no longer be sustained.

"Why, if you hold anything immediately over the flame, will the flame lengthen?—Because, by preventing the rapid escape of the heated air, you maintain a temperature which increases the combustion at the point of the flame."

"THE WORLD IN MINIATURE.

"There is a world of *miniature phenomena* which has never been fully recognised, in which we may see the mightier works of nature pleasingly and truthfully illustrated.

"When the wind blows into the corner of a street, and, whirling around, catches straw, dust, and feathers in its arms, and then wheels away, flinging the troubled atoms in all directions,—it is a miniature of the mightier *whirlwind*, which wrecks ships, uproots trees, and levels houses with the earth.

* *The Reason Why.* A careful collection of many hundreds of reasons for things which, though generally believed, are imperfectly understood. London: Houlston and Wright, Paternoster Row.

"When a cloud of dust, on a hot summer's day, rises and flies along the thirsty road, making the passenger close his eyelids, and dusting the leaves of wayside vegetation,—it is a miniature of the terrible *simoon*, which blows from the desert sands, scattering death and devastation in its track.

"When steam issues from the tea-urn, and becomes condensed in minute drops upon the window-pane,—the miniature is of the *earth's heat*, evaporating the water, and the cold air of night condensing the vapours into *dew*.

"When grass and corn bend before the wind, and are beaten down by its force; when the pond forgets its calm, and rises in troubled waves, casting the flotilla of natural boats that moves upon its surface in rude disorder upon its windward shore,—the little storm is a miniature of those great *hurricanes* which wrecked a fleet in the Black Sea, and levelled the encampments of a mighty army.

"When the snow that has gathered upon the house-top, warming beneath the smiles of the sun, slips from its bed, and drops in accumulated heaps from the roof,—it is a miniature of those terrible *avalanches* which in the Pyrenees bury villages in their icy pall, and doom man and beast to death.

"When the rivulet hurries on its course, and, meeting with obstructions, leaps over them in mimic wrath, overturning some little raft upon which, perchance, a weary fly has alighted,—it is a miniature of those *rapids* on whose banks the hippopotamus and the alligator yet live; and where, though rarely, man may be seen directing his raft over the troubled current, amid the rush of *débris* from forests unexplored.

"And when, in a basin of the rivulet, two opposing currents meet, and form a little vortex into which insect life and vegetable fragments coming within the sphere of its influence are drawn,—it is a miniature of the roaring *whirlpool*, or the wilder *mælstrom* of the Norwegian seas.

"Nature rehearses all her parts in mild whispers; and for every picture that she paints she places a first study upon the canvass. Man need not go into the heart of her terrors to understand their laws. Many an unknown Humboldt, sitting by the river's side, may rejoice in the 'aspects of nature,' and share the bliss of knowledge with the great philosopher."

HAIGH'S KIDNEY POTATO.

IN an article in THE COTTAGE GARDENER in one of the February numbers, signed T. APPLEBY, I find it stated that Haigh's Kidney was raised at Newton Kyme by a schoolmaster named Haigh. This is a mistake. It was raised from seed by a shoemaker named Major Haigh, of Bardsey, near Leeds, of whom I purchased the first sets I had, and forwarded a sample of the produce to Mr. Cuthill, Camberwell. I am in some doubts whether the Lapstone Kidney is the same as Haigh's, for I think the latter are flatter and the eyes not so distinguishable in the potato.—THE RECTOR OF NEWTON KYME, near Tadcaster.

CULTURE OF INTERMEDIATE STOCKS.

IN THE COTTAGE GARDENER of May 12th you patronise the growth of Stocks, and at the same time give a few good hints to stir up gardeners to aim more at keeping a universal display of them all the season.

The above remarks I coincide with. You do not make mention of that valuable class of Stocks, the *Intermediate*, originally called *Buck's Intermediate Scarlet*, the only colour I know of we possess with so many good properties, if true. I have frequently regretted that we are not in possession of more colours, retaining the same dwarf habit, and more particularly the certainty of a multiplicity of double flowers. If all the principal colours could but be got with every property of the above, I consider a finer class of Stocks, and more generally useful, is not extant.

I have frequently seen published a pretence to send out a dozen varieties of the *Intermediate*, but I have never succeeded in getting any at all similar in properties to the *Scarlet Intermediate* of any other decided colour. However, I vouch that I have succeeded in raising a true purple from

the original Scarlet Intermediate. It partakes in every property of the above. I send it for your inspection, along with the scarlet and purple, which have had identically the same treatment. The samples sent are not perfectly in bloom, for those are from plants which have stood out all this last winter and spring without any protection, although I have lost the greater part of the scarlet under a similar treatment, which speaks favourably of the superior hardiness of the Intermediate I send you, which has stood out under the treatment I adopt without losing a single plant on a wall border.

Those sent were sown in a cold frame on the 5th of July, pricked off, whenever they could be handled, into a similar bed; when well established removed again to an open spot of ground not rich; left there for a short time only, and the third time planted where they were to stand for the winter, on a narrow border two rows wide. I may mention that previously to digging over the ground I apply a little burnt earth or old lime rubbish. I attribute their standing this severe winter and spring, in a great degree, to the frequent transplanting, which causes them to have bushy and well-established roots. Another great advantage derived from the above system is, they can be removed and planted or potted either in-doors or out for embellishment, or wherever the operator may think fit.

I sow about the middle of April; the plants come into bloom in August, and flower on till severe frost sets in. The latter I transplant twice, first prick off, and then plant into their permanent place to flower. I may mention that I this spring purchased a packet from Messrs. E. G. Henderson, of Wellington Road, represented as the White Intermediate. I sincerely hope it will turn out well, and have all the true characteristics of the Scarlet Intermediate. However, I am nursing it as a favourite in the meantime, in hopes that it will turn out true, and I shall then have three decided colours of that esteemed class of Stocks, which I consider are invaluable.—WM. MELVILLE, *Dalmeny Park*.

[Mr. Melville must be amongst the best packers of flowers in Scotland. His new *Purple Intermediate Stock*, with two others, had no soil about the roots, only wet moss; the bottoms were nailed down in damp moss at each end of the box, causing the plants to lie horizontally along the bottom; the heads of the plants were then turned up, and were padded with moss to hold them in their natural position; and we are sure they could go to New York or Constantinople as fresh as they reached our office. We had collections of Stocks from all the best growers between Erfurt and Kensington, but never yet did we see a clear, clean, or distinct colour among the intermediate or biennial Stocks, except the scarlet or purple. Mr. Melville got hold of the true dwarf, branching, scarlet London Stock, the best and most useful Stock in Europe, and his new purple seedling is exactly of the same stamp, size, and character; therefore, if it comes as true from seeds as the parent, Scotland will bear the palm against Germany for this class of flowers.

All the *branching* Stocks, which are sown one year and flower the next, whether they be called *Queens*, *Kings*, or *Emperors*, are *Intermediate* Stocks; that is, intermediate between Ten-week and Brompton Stocks.]

SMOKE CONSUMING.

THE way, and the only way, to consume smoke is to put as many quarter-inch round holes in the fire-door, all over it, as there are square inches in the length and breadth of your fire-bars. If it is not effectually consumed by this put a few more holes, but not larger than a quarter-inch in diameter each. I am acquainted with almost every smoke consumer, patented and others, and they are all failures.—JOHN McLELLAND, *Birmingham*.

QUERIES AND ANSWERS.

PROPERTIES OF THE FUMEWORKS.

"Is it true that the common Fumewort is a good medicine for scorbutic complaints? It grows abundantly in my garden, and if it is such a medicine I shall esteem it a God-send for an afflicted child."—H. WHITE, *Lexden*.

[There are very good authorities for using the juice of the Fumewort (*Fumaria officinalis*) as a remedy in such complaints. Dr. Cullen says, "I have found it useful in many cases in which bitters are prescribed; but its remarkable virtues are those of clearing the skin of many disorders. For this it has been much commended, and I have myself experienced its good effects in many instances of cutaneous affections, which I would call lepra. I have commonly used it by expressing the juice, and giving two ounces of it twice a day; but I find the virtues remain in the dried plant, so that they may be extracted by infusion or boiling in water." For information on such subjects we recommend to you Mr. Hogg's "Natural History of the Vegetable Kingdom," now publishing in twopenny numbers. It is the best book on the subject which has appeared in the English language. The following is what he says about the Fumariaceæ:—

"GEOGRAPHICAL DISTRIBUTION.—The Fumitories or Smokeworts inhabit the temperate regions of the northern hemisphere, chiefly far inland. They are found in North America and at the Cape of Good Hope, but there are none between the tropics.

"PROPERTIES AND USES.—None of the plants belonging to this family are poisonous; on the contrary, they appear to be possessed of a tonic principle, which is contained in the bitter juice of their stalks and leaves. They contain mucilage, saline substances, and a peculiar acid called *Fumaric Acid*.

"FUMARIEÆ.—The type of the family is *Fumaria officinalis*, Common Fumitory, or Smokewort, found growing so very abundantly in almost all corn-fields and cultivated grounds. The whole plant may be used medicinally; but it is in the leaves that the greatest virtue resides. These are inodorous, have an intensely bitter, saline taste, are very succulent, mixed with mucilage, yielding by expression a juice which has the sensible and medicinal properties of the plant, and which, on evaporation, furnishes an extract, and throws out upon its surface a copious saline efflorescence. It is gently tonic, in large doses said to be laxative and diuretic; and is employed in scorbutic affections, chronic eruptions on the skin, and as an excitant to the stomach in convalescence after fevers of long duration. Other species possess the same medicinal properties; such are *F. media* and *spicata*. In Picardy the plant is used to curdle milk.

"*Corydalis bulbosa* and other tuberous-rooted members of this family are sometimes, but rarely, used in medicine. They are less bitter and less active, and their bulbous root-stocks contain an acrid resin, and an alkaloid substance which has been called *Corydaline*. The tuber of *C. bulbosa* is aromatic, intensely bitter, moderately astringent and acrid, and was formerly used as a substitute for Birthwort in expelling intestinal worms. All the family possess more or less of the properties of the preceding.

"*Dielytra cucullaria*, a native of the United States of America, is very aptly called *The Dutchman's Breeches*, from the two horns at the base of the flower; and that beautiful plant *D. spectabilis*, lately introduced by Mr. Fortune from the north of China, has now become an established favourite as one of our gayest border flowers."]

TREATMENT OF A MAGNOLIA INJURED BY REMOVAL.

"In August, 1855, in consequence of alterations and repairs at a house I had just bought, I was obliged to remove a large and old Magnolia bush about nine feet in diameter in every way, and it still shows very evident symptoms of its removal, although the distance was only a few feet; indeed, I sometimes doubt whether it will ever recover sufficiently to be any match to its fellow on the other side of the entrance doorway. Should I be doing wrong if I give it twice a week the contents of a two-gallon can of liquid manure, as drawn from a tank supplied from a poultry and pig yard, two pigs only kept? I have done so twice in the last fortnight, filling the can first half full with rain water; but my gardener objects to it, and would rather have none given, not even plain water, although the soil is a red sand, and of a very dry nature."—W. D. PAINE.

[It is wrong in principle to give stimulating water to any one of the evergreens as long as it is in bad health, and of

all the hardy evergreens this applies most to the Magnolia, on account of its very thick leaves and fleshy roots; but the gardener is wrong about watering it. If the soil is drained, rain, river, or pond water should be given it in abundance from now to the end of August as regularly as if it were in a pot, say twice a week. One-half of the gardening world is quite mad about liquid manure. Nine times out of ten, liquid manure is just as poisonous in the hands of amateurs as liquid arsenic or liquid strychnine.]

PROPAGATING THE DOUBLE-BLOSSOMED WOOD ANEMONE.

"Will you have the kindness to inform me how best to cultivate, as a border flower, and to propagate the *Anemone nemorosa*, or double-blossomed white Wood Anemone?"—S. C. A.

[Buy a bunch or a potful of it, shake half the soil from the ball if it is in a pot, and plant it in front of a flower border, partly under the shade of a Rose or some American plant, as Rhododendron, Azalea, or Daphne, where it will soon grow away, and in peat or in sandy loam, spread out into a large patch. After that, never disturb it for a lifetime except in April, when it is just coming through the ground, when you can clear away the soil round the edges of a patch down to the roots, so as to get little pieces from the *outsides of the patch* for increase. The partial shade of a bush is not absolutely necessary; but then it is more safe from garden tools and from mere *tools* of gardeners when it is out in leaf. The same treatment will do for *Anemone Apennina*, the blue one, and *A. ranunculoides*, the yellow one. These three and the Wood Sorrel, *Oxalis acetocella*, or true "Sham-rock," ought to go together for spring flowers in every garden in the three kingdoms.]

TREATMENT OF A SWARM IN A NUTT'S HIVE.

"I hived a swarm of bees on the 16th of May on Nutt's collateral system, which appears very strong, there being as much as would fill a couple of quarts. However, but a comparatively small number appear to show themselves out of doors, although the first three or four days were very warm and fine. The rest are all clustered together on the top and side. Are the queen and workers likely to be all right, or is it the custom of the drones to keep thus together? Some few return with their legs laden with yellow pollen, while the floor is strewn with thin pieces of wax, which appear like crystals of sugar. I should imagine this shows they are at work, though I see no appearance of comb, having the advantage of windows to see what they are about. Would it be advisable to feed them? If I did it in the bee-glass, which I have not yet placed on the hive, would it not cause them to leave the combs they are now, or should be, building, and commence them at the top of the glass? The morning after I hived them I placed a tumblerful of sugar and ale on the floor-board, which was empty two hours after."—HIGHFIELD.

[Your newly-hived swarm appears to be going on very well, and requires only to be let alone. The clustering at the top shows that comb building is making progress. Feeding is not needed in fine weather. Confine the bees to one box, and it will be quite time enough to place the glass on the top when the combs are worked down to the floor. The weather then must be the guide. The less use you make of the ventilators the better; still better if you throw them away altogether.]

VINES FAILING.

"I had a good show, nearly every shoot had a bunch on it; three Vines out of eight have only one or two upon them, while others are doing well. Two of them are over the furnace, and the other near the door. They are planted inside, and I believe work under the flue and path; likewise a border outside, a flat, cold border, and I find they are deep in it, which I am inclined to think is the cause of failure; likewise it may be too hot against the flue. They have been

planted about nine years. Last year I had a very good crop, and they did well in colouring."—J. W., Maidenhead.

[The difficulty in deciding arises from the fact that the Vines did well last year, and that some out of the lot only fail. We do not think they would be at all injuriously affected by the roots passing under the flue, as heat ascends. The cold, flat border is another affair; but then how is it that a few Vines only are affected? Had they not overborne last season? At the same time we have found some Vines injured and others uninjured in the same border. If you contemplate raising the roots we would advise your doing so in September. See an article lately on this subject.]

TO CORRESPONDENTS.

CINERARIAS (X. Y. Z.).—Nos. 1, 2, and 3 are very handsome, well formed, and of good substance, but they and the rest of your seedlings are not nearly large enough for London in the present season.

HEATING BY HOT WATER.—J. D. D., Allerton Tower, wishes that some of the gardeners where Messrs. Weeks and Co.'s boiler and Mr. Thomson's retort boiler have been employed would publish the results, as what has been accomplished with them, consumption of fuel, &c.

DAHLIA SHOOTS (Frenchman).—As you do not wish to propagate your Dahlias leave all the shoots on the roots, and the roots undivided. Those which are under glass must be gradually hardened before being planted out in the borders.

ANTS (J. Robinson).—We have repeatedly stated that guano or the ammoniacal liquor of the gas works put over their nest kills and drives them away.

TALLY (Abel Nott).—The name on your tally is intended for *Press's Eclipse Camellia*.

BOOK ON THE HORSE (F. W. S.).—That entitled "The Horse," written by Mr. Youatt, and published by the Society for the Diffusion of Useful Knowledge.

CHERRIES AND APRICOTS IN ORCHARD HOUSE (J. Hackness).—These both do very well in pots with us, therefore the cause of the bloom dropping must be either want of impregnation or the roots being defective. We give our trees good turfy loam, and water once a week with liquid manure; give air abundantly, and keep it very moist by watering the path daily whilst the blossom is open.

CALCEOLARIAS (W. N.).—Many thanks for your *Aurea floribunda*. We shall expect to get it at the Chiswick Show.

ACACIA SHEDDING ITS LEAVES (H. H.).—Some of the Acacias throw off many of their leaves just as Bays, Laurels, and Hollies do in summer. There will soon be healthy ones if the plant is all right. Want of water, or too much of it, will cause your buds to wither, especially when subjected to a sudden change of temperature. We find all liquid manure good when rightly applied. See on *watering* what Mr. Fish has said lately to window gardeners.

VERMILION BRILLIANT TULIP (L.).—It is scarlet crimson, but there is a little yellow at the bottom of the petals.

NAMES OF PLANTS (M., Wakefield).—No. 1. *Cerastium dioicum*? No. 2. *Cerastium tomentosum*. (A Subscriber).—The pea-blossomed flower is *Ononis rotundifolia*, or round-leaved Rest Harrow; the other is *Silene pendula*, pendulous Catchfly. (E. S.).—Your Fern is *Cyrtomium falcatum*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JUNE 3rd, 4th, and 5th. BATH AND WEST OF ENGLAND. Sec., Mr. John Kingsbury, 10, Hammet Street, Taunton. Entries close the 1st of May.

JUNE 26th. EXETER. Sec., T. W. Gray, Esq., Queen Street, Exeter.

JULY 8th, 9th, and 10th, 1857. LEAMINGTON. Sec., Thomas Grove.

JULY 9th. PRESCOT. Sec., J. F. Ollard.

JULY 28th, 29th, and 30th. SHEFFIELD, SOUTH YORKSHIRE, AND NORTH DERBYSHIRE. Sec., William Henry Dawson, Fig Tree Lane, Sheffield.

AUGUST 8th, 10th, 11th, and 12th. CRYSTAL PALACE. Sec., W. Houghton.

AUGUST 19. BRIDLINGTON. Sec., Mr. Thomas Cape.

SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.

SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Sec., Mr. H. Churchill, King's Head Hotel.

OCTOBER 1st and 2nd. WORCESTER.

NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.

DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.

DECEMBER 30th and 31st. BURNLEY AND EAST LANCASHIRE. Entries close December 1st. Secs., Angus Sutherland and Ralph Landless.

JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.

JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.

N.B.—Secretaries will oblige us by sending early copies of their lists.

SOME THINGS WHICH ARE, MAY BE, AND OUGHT TO BE.

THE great leviathan of the press and all presses, the *Times*, in its leader of May 17, spoke of Chinese geese and Muscovy ducks. A great cantatrice gives what we suppose to be her *nom de guerre*, Mademoiselle Ortolani. Now, these two events prove that the "fancy" is becoming general; and the use of these terms proves, again, that the subject is uppermost in people's minds.

The *Times* will, perhaps, come out on the Brahma controversy or combs in Polands, and the next new singer will be Signor Becassini. When the West End is deserted, and when the "thunderers" are resting from their labours, we shall, perhaps, have a disquisition on roup, just as we now have on the murrain in cattle.

In the narrative of a "Residence in Little Pedlington" the auctioneer of that celebrated place, after informing the public that Chatsworth and Blenheim are not for sale, that everybody does not require a gallery of pictures by the old masters, ten thousand ounces of plate, or a large cellar of wines, informs his patrons that he really has a nice property for sale, being a six-roomed cottage, with the usual conveniences of copper, wash-house, &c.

We, then, can only say that it is possible the *Times* may not take up the poultry question, but we really will continue to give it our best attention. We shall have our revenge in the day when the first leader will be devoted to the great International Poultry Show, fourth Meeting, held at St. Petersburg, those previously having been at London, Paris, and New York; the second on the progress of poultry as an article of food, statistically proving that, but for the poultry "mania," as it was once foolishly called, the production of food would not have kept pace with the increase of population, arguing thus—that if an egg be equivalent to a quarter of a pound of meat, then, of course, the many millions of eggs would amount to a considerable weight of food; and the third warms our heart while we think of it—the graceful acknowledgment in the *Times* of 1897 of the debt due to ourselves as the upholders and cherishers of the pursuit while it wanted support.

Now, while other questions are in abeyance, and shows are only in contemplation, we may turn our leisure to those which will receive their solution when the great contests take place. Our Irish brethren in the pursuit have, in the opinion of many, we may say all amateurs in this country, made a great mistake in laying down rules for the colour of Dorkings, and disqualifying any that differ from them. At late shows in Ireland birds have been stigmatised as "impure" which had taken prizes at some of our largest shows, where the best Judges have officiated. This is a pity, and we think it is wrong. No rule can be more rigorously carried out than that which applies to feather in all breeds where it is essential, such as Polands, Hamburgs, Game, Cochins, and Bantams, at all our principal exhibitions in England. Let those who have shown Rouen ducks with faulty bills; Grouse Cochin cocks with yellow feathers in their breasts; light Cinnamon hens with Buff cocks; Game hens deviating only in a shade from the cock; Aylesbury ducks with orange bills; speak of the rigour with which rules are carried out to their great discomfort. The Dorking is essentially a large and a table fowl. Symmetry is its chief point, and is so marked that any impurity is easily detected, nor is its form capable of improvement. There is no inducement to cross. We, therefore, hope our fellow-amateurs will relinquish all notions of plumage and combs, and confine themselves to the really valuable and admitted properties of the breed.

WHO ARE BEST SUITED TO FULFIL THE DUTIES OF POULTRY JUDGES?

THIS is undoubtedly a very important question both as relates to Poultry Committees and to every class of poultry exhibitors, whatever may happen to be their individual predilection as to the variety of poultry they cultivate. Indeed, on this matter solely no small degree of future success or comparative failure of every Poultry Show in the

kingdom most undeniably depends. So important, then, is this single feature, that frequent recurrence to the most advisable mode of procedure can scarcely be too strongly insisted upon.

There is not a doubt that a Poultry Judge ought to act exclusively on his *own* opinion, uninfluenced by pressure of any kind "from without." Neither friendship, self-interest, nor yet even predilections of any kind should divert him from the path duty has laid before him. In short, so long as he determines to fulfil the varied duties of public arbitrator at Poultry Meetings he undoubtedly ought to treat with indifference the urgent solicitations of his most valued acquaintances, and to equally refuse to be led astray by the many efforts of the moneyed, though unscrupulous exhibitor to give decisions agreeing with his respective advantage. If he fails to act in accordance with these principles such a man proves rather the foe than the supporter of these truly popular amusements.

The essentials to properly carry out the duty appointed him are, first, competency to appreciate all the excellencies or defects of the several pens of poultry placed before him in competition. Combined with this qualification, however, he must possess an eye quickly discriminative at first sight of all shortcomings, be they what they may, as no amount of efficiency, if dilatorily fulfilled, will ever stand in lieu of this requisite; for one of the great failings of our present arrangements is, no doubt, an insufficiency of time allotted to the Judges for their unenviable occupation.

When it is duly considered how many of our exhibitors occupy several hours in finally determining which are the best specimens they themselves possess to send as competitors to a Poultry Show, it will at once be evident that the difficulties incident to the eventual determination of the priority of position among forty or fifty pens in a single class only, thus previously selected by their several owners, require from the Judge or Judges infinitely increased quickness, decision, and regularity of operation, otherwise how possibly can, perchance, a couple or three hours suffice to appoint *all* the awards in at least fifty classes? It will thus be seen how much depends upon a quick and experienced eye.

Integrity of purpose, also, is equally and as vitally necessary. This wanting, all other requisites will surely warp before temptation to injustice, or die away altogether where self-interest dictates the necessity of apportioning particular awards exclusively for the purpose of personal aggrandisement; or, contrariwise, the poultry will be "returned" as ineligible, and the purchase be rejected. True it is, Poultry Judges should never supply to exhibitors the identical fowls they afterwards are called upon to adjudge. It is placing heavy temptations between their conscience and the fulfilment of justice. Human nature is naturally prone to self-considerations, and it can scarcely be expected that, at least in cases of close equality, the balance will not at length "draw" in favour of a pen that the present owner ordered to be procured for him without the slightest limitation as to price "if they could win." When £30, £40, or even £50 are thus jeopardised by the result, and that, too, when the arbitrator is himself to be the recipient, it scarcely requires the foresight of a prophet to determine the probabilities; indeed, the surprise is, "how could it be otherwise?"

The Judges who are alone conducive to the long-continued popularity of Poultry Shows are those who, having no personal interest, are not likely to "swerve" to the advantage of any competitor, but stand equally aloof from the monetary interests of all parties—individuals who "court no favours" from the affluent, and equally disdain to receive any pecuniary emolument, even where insidiously proffered, whatever the shape of the presentation.

The real interests of the general body of exhibitors are those thus feebly depicted. They are their own individually; for, if heavy purchases alone are to decide the premiums, all parties in turn, let them possess whatever excellence they may in their competing birds, will at times be sold to suit existing circumstances. There is not a single incident connected with Poultry Shows that is, therefore, so worthy of the most careful and closely-considered attention of Committees of Poultry Shows as the due appointment of sufficient Judges, whose real integrity of purpose and ability to fulfil its duties are acknowledged and well proved.—D. T.

BELGIAN CANARIES.

I HAVE to thank Mr. Etherington for his kindness in giving me some information respecting pied mule breeding. I am sorry to add that I am one of those who have tried the Cheverel, or White-throated Goldfinch, both with yellow and pied hens without success.

As regards the characteristics of Belgian Canaries I beg to remind him that I did not set forth my ideas as the rules of what English fanciers call Belgian Canaries. I have bred "Belgian Canaries" for thirteen years. I commenced keeping them at St. Omer, my birds being procured for me from the Flemish provinces, and I assure Mr. E. that for a bird to be round shouldered or hooped, that is to say, the head and tail forming a curve with the body, is one of the greatest faults a true Belgian can possess.

Length is a point of great importance, but for the birds to be straight and erect like a falcon is above all other points desirable. Coarse birds are frequently bent or hooped, though this fault may also be induced by the perches being too near to the top of the cage, which will spoil the best-carriaged birds.

It would seem strange if this fault, so much despised in one part, should be considered a beauty in another, but so it ever will be. Tastes and fancies differ. The Italians admire a full-proportioned waist, while some nations I could mention prefer one so small as to seem like aiming at a divorce between the upper and lower extremities, thus encouraging weakness and disease in place of health and happiness. One nation likes a prominent or straight nose, another breaks it to make it flat; one admires a well-proportioned head, while another flattens it as a sign of high descent. If we endeavour to keep our teeth clean and white, another nation prefers them black.

Still, I do not think it would be fair to set forth as pure Belgian Canaries those birds that represent the worst points of the breed, *i.e.*, being hooped, as has been done by some writers of late. I do not object to any other of the points advanced, but I prefer the shoulders not too pinched or narrow, nor yet the bird too coarse. The tail, also, I prefer not shut up as one feather, but about as wide as two. These last points are, however, merely my own ideas; but hooped being a fault is a standard rule where I first bred and obtained them.—B. P. BRENT.

NOTES ON POLANDS.

BOTH "PERRUQUIER" and "C. E. C." must pardon me for thinking that they are rather heretical in their opinion when they assert that the crest of the Polish cock should fall equally all round. Now, although I would not for a moment have it thought that I agree with "THE COMB CHAMPION" and "A POLAND FANCIER" in the matter of combs, believing as I do, with "C. E. C.," that a comb in a Poland cock is as great a defect as possible (I might, perhaps, except a humped back), yet I do not believe that the crest of either cock or hen should fall forward in front. I think this a very great defect, and one which I would on no account tolerate.

Nor, in a general way, would the comb be any prevention to the falling of the crest in the front, as "THE COMB CHAMPION" seems to think it would, as I have several times seen birds with plenty of comb have their crest falling quite over the comb.

"THE COMB CHAMPION" urges, as another reason for the Polish fowls wearing combs, that it is natural for them to do so. Allow me to say that I consider this a very bad reason; indeed, none at all; for, if Nature is to be admitted as our guide, then we may say that Cochins should have plain legs; Spanish, red faces; Dorkings, only four claws, and so on; for it is equally true that it is natural for all these fowls to have the points named as that it is natural that Polish fowls should have combs. No, we must not admit Nature here; for, although Nature is well enough in her place, she will not do at all here; she is here quite out of her place.

Allow me to say that I consider the Poland stands in the first rank as a useful fowl. It is one of the best of layers, and I do not find the chickens any tenderer or less hardy than any other breed, excepting the Cochins and

Malays, and as a table fowl it has only one drawback—its dark leg; in all other points it is surpassed by none. Before this season I always used to consider my Black-crested Black and Silver Polish to be the best and earliest layers of the whole family; but this season their Golden cousins have quite equalled them. I fully believe that the Polish fowl only requires to be more extensively kept for its good qualities to be better appreciated.—G. W. B., *Louth*.

WHITE RABBITS WITH BLACK POINTS.

HAVING observed in your journal of the 10th of March, an inquiry as to the origin of the white Rabbits with black noses, ears, feet, and tail, and with pink eyes, a pair of which were exhibited at the Crystal Palace Show, and which, according to your correspondent, amongst other names, have been styled "Africans," I believe I can give some information on the subject, as I am almost certain that the stock now sold in London and the vicinity at such high prices was bred from Rabbits of my own of nearly an opposite colour. About nine years back I commenced breeding silver grey tame Rabbits from a stock of a few silver greys and blacks, which I procured from a dealer in Leadenhall Market, and for four years after, though I bred some hundreds, no other colours were ever thrown than silvers, blacks, or sprints, *i.e.*, only partly covered with the silver points. About that time I introduced a buck which had been bred by crossing the produce of a wild silver grey buck and tame doe twice with other tame silvers, consequently having one-eighth of wild blood in him. Amongst the first litter bred from him and a silver grey doe appeared a white Rabbit, similar to the Crystal Palace pair; and during that season my does occasionally bred by him these white Africans, and also sandy ones. The following season, to change the blood and improve the quality of the fur, I introduced some half-wild silver grey bucks, bred from a Lincolnshire warren buck and tame doe. When the two wild strains united the Africans became more numerous (about one-third in number to two-thirds of silvers). On two occasions, five and four years ago, I sent some silver grey does, and also a number of Africans, to a dealer in Leadenhall Market, and from them, I have no doubt, those in London and the vicinity were bred. My reason for this opinion is, that, except the dealer above mentioned and those who have purchased from him, no other person but myself and about seven others to whom I have sold them within the last year, is in possession of a pure silver grey tame breed crossed with the wild. I sold the greater part of my stock to a gentleman last year, retaining only a few silvers, which I selected as not breeding Africans, and out of about sixty Rabbits bred last season there were only three, and those sandy, one of which I now have. I understand that, on the Norfolk silver grey warren, where the Rabbits have been much intermixed with the common grey, numerous sandy and white Africans appear; but I never heard of any on the pure silver grey or common grey warrens. It would seem, therefore, that these extraordinary colours appear only when the wild silver grey is mixed with a different variety. Why it is so, must be left to the physiologist to determine. It strikes me that at some distant period the wild silver grey breed may have been produced by a cross from the white and sandy Africans (obtained from some other country), and the wild black Rabbits. The silver grey skins are bought up by the fur merchants in London in large quantities, from the silver grey warrens, at from £1 to £1 4s. per dozen, and exported to Russia and China, where they are made up, I believe, in imitation of the silver grey fox. It seems that the taste of our Rabbit fanciers does not agree with that of those fur-clad nations, as the colour of the pair to which the Judges awarded the prize at the Crystal Palace would have been by them infinitely less valued than the darkest specimen of the pair I exhibited there; whilst the size of the prize pair, though probably more admired, indicated a larger proportion of the tame breed, which would render the fur thinner and of an inferior quality.

I am afraid I have already trespassed too much on your columns, and will reserve a few observations on the ex-

cellence of Rabbit manure, recommended by Parkinson and other farm writers, as a stimulant to field crops, and which I have tested successfully, being, from its great strength, well worthy to take a place amongst the substitutes for guano, the supply of which appears to be rapidly failing.—SILVER GREY.

NATIONAL COLUMBARIAN CLUB.

In your answer to HENRY HEINRICKS in your paper of the 26th instant I notice that you only mention two clubs. I therefore beg to inform you that there is another called the "National Columbarian Club," which ranks very nearly, if not quite, with the Philoperisteron Society. I further beg to state that any gentleman desirous of joining the Club can obtain any information on application, per post or otherwise, to me.—W. WRENCH TOWSE, *Hon. Sec. to the National Columbarian Club.*

P.S.—Our meetings are held at Anderton's Hotel, Fleet Street. I also beg to inclose a copy of our Rules, a notice of which in your next (should you have space) would much oblige.—W. W. T.

NATIONAL COLUMBARIAN CLUB.

President, E. R. Maddeford, Esq., Staines, Middlesex. *Vice-Presidents*, Harrison Weir, Esq., Lyndhurst Villas, Peckham, and W. H. Fry, Esq., London Road, Brighton. *Auditor*, James Walton, Jun., Esq., Lavender Hill, Wandsworth. *Honorary Secretary*, W. Wrench Towse, Esq., Fishmongers' Hall, London.

RULES AND REGULATIONS.

1. That an Annual Subscription of ten shillings and sixpence be paid by each member on his election, and at every subsequent meeting in January.
2. That a Grand Annual Show take place, to which admission be by tickets only.
3. That the Club be conducted by a President, Vice-Presidents, Auditor, and Secretary, who shall be elected by ballot annually at the first meeting of the Club, and be eligible for re-election.
4. That a Show take place on the fourth Tuesday in the months of September, October, November, December, January, and February.
5. That at the General Meeting for the election of Officers, &c., it shall be competent for members to propose any alteration or addition to the Rules.
6. That all motions must be duly seconded before the Chairman submits them to the meeting.
7. That each member shall pay an entrance fee of ten shillings and sixpence.
8. That any member retiring renounce his claim to the Show Pens, and all other privileges and advantages of the Club.
9. That all monies must be paid to the Secretary.
10. That the Secretary make no disbursements without the sanction of the members present at a meeting of the Club.
11. That the Auditor report upon the accounts at the meeting in September.
12. That a member being desirous of purchasing any bird exhibited at a meeting may, upon payment of one shilling, request the Secretary to put the same up for sale, the owner having the right to make but one bidding.
13. That a Show of Young Birds be held on a day to be fixed by the members at the meeting in February.
14. That no Pigeon dealer be admitted either as member or visitor.
15. That any gentleman wishing to join the Club shall be duly proposed and seconded at a meeting, notice having been given of the same at a previous meeting. One black ball in ten to exclude.

SILVER-PENCILLED HAMBURGH AS LAYERS.—Mr. Archer, of Malvern, has two pullets of this breed, hatched January 3rd, both of which commenced laying on Thursday, May 14th.—S. P. H.

OUR LETTER BOX.

MINASI'S INCUBATOR (*A Much-indebted Reader*).—We cannot find out where this apparatus can now be obtained.

SPANISH FOWLS LOSING THEIR NECK FEATHERS (*A. M. B.*).—This is not unusual. You will find this and other poultry diseases treated of briefly but well in "The Poultry Book for the Many." We extract the following applicable to your case: "BALDNESS.—Losing the feathers of the head and neck. *Cause*, defect of wholesome and green food. *Remedy*, good feeding and plenty of green food, at the same time rubbing the bald place with mercurial ointment, and giving a five-grain Plummer's pill every second day for a week."

EXHIBITING CHICKENS (*Mary Mc Duff*).—None should be exhibited less than from four to five months old. Success, of course, depends upon their excellence, both as to the requisite points, perfect development, and high condition.

COCHIN-CHINA PULLET (*M. F. S.*).—It is very early, but not very uncommon, for a pullet to have laid when only four months and a week old.

EGGS NOT HATCHING (*H. T.*).—Nothing can be better than your runs. We shall be disposed to attribute the failure of your eggs, first to the dry weather, and next to your style of sitting them. In long dry times, like those through which we have just passed, the eggs require moisture, and this should be done by sprinkling with the fingers. The inner membrane of the egg becomes dry and contracted, and the chicken dies in consequence. If it even reaches the time of hatching it cannot make its way out of the shell. The fact of all your eggs having chickens without hatching proves this. A covered basket is an abomination for a sitting hen—it breeds and harbours vermin. We never find it necessary to shut in our hens at all, but if we did we should put them in a box without a bottom, because for well doing it is essential that all nests should be on the ground. A sod of grass is the best bottom for a nest. The floor of a stall in a stable is a bad place, as it is of course pitched with stones, and nothing can be a worse bottom than that. Ten minutes is not nearly long enough for a hen to be off her nest. She should be off from half to three quarters of an hour. She wants to drink, feed, stretch herself, and have a good wallow in the dust. No hen sits well unless she is comfortable and in good health. Let your hens have open nests on the ground. Let them leave at will, watching that they do not desert; moisten the eggs a little if the weather is dry, and you will have what Jacob Faithful always wished for—"better luck next time."

EGGS UNPROLIFIC (*T. W. Wrench*).—We do not shut up our hens when they are sitting. We make them sit on the ground, and put up a board or a basket-lid to give them all the protection or privacy they require. We let them leave their nests when they like, taking care they are not off their eggs more than half an hour. The probable cause of failure is the dry weather. The eggs require to be moistened by sprinkling, especially in boxes.

NUMBER OF EGGS LAID BY TOULOUSE GEESE (*Goose*).—They vary from sixteen to twenty-two in a year. There is no fixed number, as it is affected by many circumstances, such as age, and whether allowed to sit on the first. Geese will often lay two clutches.

GAPES (*J. Choyce, jun.*).—If the fumes of spirit of turpentine do not kill the worms in the windpipe there is little hope for wheat steeped in that spirit being of any use. The worms are in the windpipe, not in the passage to the gizzard.

DUCK'S EGGS (*Rouen*).—Their fertility will depend upon circumstances. They ought to be fertile in forty-eight hours.

LONDON MARKETS.—JUNE 1ST.

COVENT GARDEN.

We have now a fair amount of business doing, and the supply good. Importations comprise *Endive*, *Artichokes*, *Spring Carrots*, and large consignments of *Peas* three times a week. Cornwall sends us *Potatoes* of both sorts, *Green Peas* and *Asparagus*, and in a few days we shall look for some out-door *Strawberries* from Devon and Somerset.

POULTRY.

The supply of young poultry gradually increases, and the demand improves.

Large fowls.. 7s. 0d. to 8s. 0d. each.	Guinea Fowls 4s. 0d. to 4s. 6d. each.
Smaller do..... 4s. 6d. to 6s. „	Pigeons 9d. to 10d. „
Chickens .. 3s. 9d. to 4s. 0d. „	Rabbits.... 1s. 4d. to 1s. 5d. „
Goslings..... 6s. to 6s. 6d. „	Wild ditto..... 10d. to 11d. „
Ducklings.. 4s. 0d. to 4s. 6d. „	Leverets.... 3s. 0d. to 5s. 0d. „

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—June 2, 1857.

WEEKLY CALENDAR.

D M	D W	JUNE 9—15, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock' af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
9	TU	Butterwort (Pinguicula).	30.128—30.062	75—49	S.W.	—	46 a. 3	12 a. 8	10 38	17	1 6	160
10	W	Meadow Clary (Salvia).	30.083—30.064	76—37	N.E.	—	45	13	11 12	18	0 55	161
11	TH	ST. BARNABAS.	30.066—30.004	76—39	S.	—	45	14	11 36	19	0 43	162
12	F	Wild Clary (S. verbenaca)	29.920—29.854	66—55	S.W.	12	45	14	11 53	20	0 31	163
13	S	Butterfly Orchis (O. bifolia).	29.777—29.525	64—54	S.W.	24	44	15	morn.	21	0 19	164
14	SUN	1 SUNDAY AFT. TRINITY.	29.779—29.568	65—37	S.W.	04	44	16	0 8	22	0 6	165
15	M	Lizard Flower (Satyrium).	30.102—29.909	75—35	N.W.	—	44	16	0 20	☾	bef. 7	166

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 71.3°, and 48.8°, respectively. The greatest heat, 90°, occurred on the 12th, in 1842; and the lowest cold, 34°, on the 13th, in 1849. During the period 107 days were fine, and on 89 rain fell.

USEFUL GARDEN GRASSES.

FESTU'CA OVINA TENUIFO'LIA.

(SLENDER-LEAVED SHEEP'S FESCUE.)



THIS is one of the best of our lawn Grasses. It is a perennial, with roots fibrous, numerous, long, hair-shaped, smooth, and blackish. Stems averaging ten inches in height, square in the upper part, erect, slender, rather stiff, smooth, leafy below only. Leaves chiefly rising from the roots, very numerous, in dense tufts, pointed, long, folded so as to be fine and bristle-like, roughish, dull green. Leaf-sheaths angular, or furrowed. Stipules very short, blunt, having on each side a polished tubercle at the top of the sheath like a knot. Flower-head a small, erect panicle, close, and unilateral. Florets nearly cylindrical, pointed, smooth at the base, and at

the edges of the inner valve awned in *Festuca ovina*, but not awned in *F. ovina tenuifolia*; keel scarcely prominent, upper part roughish from very small tubercles. One valve of calyx only three-quarters the length of the other. Flowers in June and July. It belongs to Triandria Digynia.

This is an excellent lawn Grass, for, unlike *Festuca ovina*, it is not of a very tufted habit of growth, has shorter stems, more slender leaves, is brighter green, thrives best on a light, dry, garden soil, grows early, and continues of a good colour late in the year.

It was known to Ray, who describes it as *Gramen capillaceum locustellis pennatis non aristatis*. It is good for the making of Leghorn bonnets, because the stems are very fine, only jointed near their base, and are nearly of an equal thickness throughout.

WE have great pleasure in announcing that the HORTICULTURAL SOCIETY'S GARDENS will be open to the public without any payment for entrance during the whole of this week. This is to enable visitors to inspect the implements and other horticultural manufactures there assembled. They well deserve inspection.

CRYSTAL PALACE FLOWER SHOW.—MAY 30TH.

THIS was one of the largest Flower Shows, if not the very largest, that ever was held in England. I never saw more plants put together with among them so few of second and third rate merit. The fruit was also very abundant, and some of it was very good, but the great bulk of it was inferior. Grapes and Pines were the chief of the whole. The Pines were particularly uneven in the degrees of comparison, as of good, better, best; big, bigger, biggest; small, smaller, smallest; and the English language is so decided in the adjectives that we are not able to express the qualities and qualifications but to one half the extent they could do in the Gaelic language. We have no words in the language to express the different degrees of ripeness among the Grapes, the white ones being the least ripe. There were about a dozen of pot Grapes, and some Raspberries also, very few Peaches, Figs, or Cherries, and no orchard-house trees at all. There were not many really new plants, but some of the newest were of great interest and value. The stove and greenhouse plants in collections in bloom were magnificently grand. The variegated and fine-leaved collections were good, but variegated only as angels' visits; except the collection which won the second prize I would disqualify them "in the lump" for lack of variation.

PELARGONIUMS and Fancies very good, and very evenly matched, every one of the growers having a good many plants in common. There was but one plant of *Una* and of the *Virgin Queen*, the newest and the oldest of the best whites. *Sanspareil* was almost in every collection, and *Governor-General* was nearly as popular. The Fancies were much the same. There was not much novelty in seedlings of any class, the season being yet too early. *Blanchefleur* was there, but under a new proprietor, Mr. Cutbush, of Highgate, having bought it since our May Meeting in Regent Street, whence I set out its character. *Blanchefleur* is the best trade plant we have had since Tom Thumb's time. I should not be the least surprised to hear soon of a new class of Geraniums which will stifle the rage for the French spotted class—a class which will flower regularly for nine months out of the twelve. Dennis's *Alma* and *Blanchefleur* are of that stamp; both are large enough for any conscience, and *Blanchefleur* is as good as *Pearl*, and like it to begin with.

Novelties were all from the nurseries. Mr. Veitch sent a new *Platycerium*, called *biforme*; *Dendrobium Veitchianum*, a botanical species, curiously streaked, greenish inside, and pale yellow sepals; the pretty rose-coloured new *Chysis Limminghi*; the white *Ixora acuminata*; a most prolific white *Pernettya* of excellent habit; a new climbing *Plectranthus*, with large, purple, velvety leaves, which are also blotched; the rare yellow *Rhododendron Brookeanum*, from Borneo; also *Rhododendron Veitchii*, the large, white-frilled kind which I told of from the Horticultural as being the best of all the new races; also his *Princess Royal* and *Jasminiflorum*; a good plant of *Embothrium coccineum*, which improves every year, and will vie with the *Ixoras* when it gets about; *Grevillea Drummondii*, a strong, upright-branched spike of whitish flowers, a fine thing for a winter garden; *Hippomane spinosa*, another of the fine-leaved plants; it is holly-spined, with the leaves like some huge *Theophrasta*, and of a stout, upright habit. *Odontoglossum Reichenheimi*, fine plants of *Wellingtonia*, *Thuja gigantea*, *Abies Kämpferi*, *Tradescantia vittata*, and *Meyenia erecta*.

Mr. Epps, of Maidstone, had the next group, which was a vase full of seedling *Gloxinias*, mossed over and fringed with pieces of *Perilla*, an excellent plant for garnishing in strong contrasts; two seedling Heaths; and a cluster of the above *Tradescantia vittata*.

After him stood Mr. Glendinning's China novelties—half a dozen of the new Larch, *Abies Kämpferi*, by which he ought to make a handsome fortune, being the only possessor of a stock of it, and itself a more hardy, a faster-growing, and a better-looking plant than the European Larch, for which it will be a powerful rival after the pleasure grounds are full of it; the Rice Paper plant; a *Statice macroptera*; the lovely and most beautiful *Gesnera Donklari*; and his *Farfugium grande*, the king or queen of all the variegated plants: one of the plants of it was hard upon five feet in diameter.

Mr. Green showed *Rhododendron Dalhousiae*. Mr. Mitchell, of Brighton, exhibited the true *Pelargonium peltatum variegatum*, which I said was all but lost, but his name for it was wrong. Mr. Cutbush had a *Genetyllis Hookeriana* in a collection of miscellaneous plants. Messrs. Jackson, of Kingston, had two remarkable *Begonias*, the true *picta*, which is in the way of *Reichenheimi*, and *ricinifolia maculata*, a fine Bromeliad, with a crimson ray across the centre of the leaves; the new Sikkim *Rhododendron Blandfordiflorum*, flowering from the open ground, and the best Orchid we have had for years; a new *Lælia*, called *Brysiانا*, a magnificent flower, which puts one in mind, firstly, of *Cattleya crispa*, and, secondly, of *Lælia purpurata*. Just think for one moment of a larger flower than either, but made up, the outside from *Cattleya crispa* and the inside from *Lælia purpurata*.

The only collection of *Bedding Geraniums* was from Mr. Bragg, of Slough, the white *Unique* and *Quercifolium superbum*. In this collection they were each nearly four feet in diameter, that is, they were twice the size ever seen by the reporter, and each of them would make a good bed on a terrace. The Quercifoil was wrongly named, and the name of *Diadematum erubescens* was misspelled. The purple *Unique* was fine, and *Sidonia* was not amiss; but we have better *Sidonias* in the Experimental, eleven-year-old plants. *Sidonia* does not "get her teeth" till the tenth year, but after teething she is the best bedder of the race.

Mr. Henderson, of the Pine Apple Place Nursery, sent a fine gigantic *Lily* in bloom; also *Rhododendron Dalhousiae* and *Javanicum*. I did not see anything from the Wellington Road Nursery, nor from the Tooting Nursery, nor did Mr. Lane exhibit his *Roses* here.

Mr. Morris showed *Rhododendron cinnabarinum*, which looks like Mr. Jackson's *Blandfordiflorum*. Six collections of Everlastings (*Aphelaxis*) side by side made a glittering impression. *Criterion* was the best light Azalea there. This is Mr. Ivery's new seedling, two or three years back, in the way of *Exquisita*. *Extranii* was the best of the rosy red Azaleas, and *lucens* the best dark red. *Decora* is my own favourite Azalea. *Extranii* is in the same way, but we have not yet beaten the Chinese in this class.

FUCHSIAS.—There was a decided improvement in growing Fuchsias in one of the numerous collections. They might be called pillar Fuchsias, but they were regular columns from eight to ten feet, just as wide at the bottom, but no wider, than they were at the top. As the laws of pruning and training admit all and every form of departure from the natural shape of a tree or bush, I hold that the form which gives most flowers in the least house or tent room is the best; therefore the present form of the Pelargoniums must be the worst, and so it is. Until I see Pelargoniums at least twice as high as they are across I shall continue to believe that the florists cut the ground from under their heels. Anything to take off the insipid sameness of their training is welcomed by the public, and that accounts for the change in favour of the new French spotted breed. It is not that that breed is better, or a quarter so good as English Pelargoniums, but it offers a variety from the deadness and dullness of the style in which the florists exhibit a superior race. Pillar Fuchsias must not be taken for pyramidal Fuchsias. The pyramid is the natural shape of a large section of Fuchsias, but the natural is not the best form of a plant to show off beauty. A Fuchsia with a spiry top and wide-spreading branches at the bottom looks like a dragon-fly sitting on a balloon, or like a young lady with six-and-thirty yards in the "blow" of her petticoats, and carrying her dress in her hands with all the earnestness of a water-carrier. I cannot, of course, swear positively to the fact, but I am almost certain that the "squat" training, as Mr. Marnock would say, suggested the present style of fashion in the dress of the fair middle classes, which style—but no matter. Duchesses and the higher ladies in the peerage call this style by a name that even I, with all my nerves, cannot pluck courage enough to write down in plain English, a fact I learned, not for the first time, that day.

Well, to make a pillar Fuchsia, take up five or seven leaders from the very bottom, and never allow them to bulge out from the perpendicular, or to incline towards the top. Begin with a *strong bottom* in October, give stove heat all the winter, shift as nature and artifice demand, and by the time your plant is showing bloom the framework of it is ten feet high. Never lose that *first winter's growth*, but spur prune it as you would a White or Red Currant bush, and never tie another shoot except the five or seven which compose the frame, let

the growth be ever so thick or so rambling. You may thin, prune, and regulate; but tie not, and your Fuchsias will some day be talked of before the Queen.

Venus de Medici was again the best fancy colour in Fuchsias. *Sidonia* is just in the same way, with a better habit and a smaller flower, purple inside and light outside, without being either purple or white. The best real purple inside and real white over it among all that were shown that day was *Fairy Queen*.

CALCEOLARIAS.—Mr. Turner and Mr. Cole had the only two collections of bedding or half-shrubby Calceolarias. Cole's *Queen of Yellows* was the best yellow there for a bed, *Cloth of Gold* the next, and *Standard* the third best. In Mr. Turner's collection *California* would make the best yellow bed; *Gold-finder* the next best yellow. The best dark yellow is *Eclipse*, and *Rubra* the next to it, and *Tamberlik* is a good brown for mixing with clear yellows in beds; and there was one plant of a pure yellow bedding Calceolaria, without the name of the owner, which was by far the best bedding sort there unless my old eyes made a mistake. It was named *Aurea floribunda*, and is of the *Rugosa* section, and better than the *Rugosa floribunda*, the best yellow at the Crystal Palace gardens, and at the garden of the Horticultural Society.

Book down *Eclipse*, dark; *Aurea floribunda*, yellow; *Queen of Yellows*, ditto; and *Tamberlik*, brown, to be planted in the best and choicest flower-beds, as shall be notified after the storm of shows is over. There was also a very promising lot of half-shrubby seedling Calceolarias for pots and beds from a Mr. James Burley, Limpsfield, Surrey, and it strikes me that Mr. Burley has dug into an old, forgotten vein in one of the golden mines of Calceolarias; for once upon a time I was in the same diggings, and have known the best veins and runnings in all the mines thereabouts.

ROSES.—Mr. Rowland first again, and most deservedly so. The very sight of his Roses, without his Macassar, is enough to make the hair grow on a bald head like mine. Mr. Busby, of "Golden Hamburg locks," was only half a nose less sweet than Mr. Rowland; while Mr. Paul proved an old and much-worn idea of Ray's, which was embodied by Linnæus in this remarkable sentence, *Natura non facit saltus* (Nature makes no leaps). He never could get to the head at one jump, only by imperceptible degrees; but, after all, might it not be a natural leap? Was it not very natural for Mr. Lane, after showing at Manchester and at the "Park," to stop at home that day to water his Roses? and was it not just as natural for Mr. Paul to jump into Mr. Lane's boots in his absence? and it must be as natural to jump into boots as to leap into shoes. Messrs. Fraser were second in the nurserymen's class for Roses, *Coup de Hêbe* being the model. *Auguste Mie* was above the model for the first time in Mr. Paul's collection; and the chief kinds in all the lots were these two, with Paul's *Ricaut* and *Perras*, the *Malmaison* Rose, *Souvenir d'un Ami*; *Gloire de Dijon*, fine; *Madame Willermosz*, ditto; *Baronne Prevost*, and *Géant des Batailles*; and in a collection of small plants *Général Jacqueminot* was by far the best and brightest.

FRENCH PELARGONIUMS.—*Ernest Duval* and *Lemichez* were the only two French spotted Pelargoniums; therefore this class may not be so early as our own. Mr. Turner took the lead here, and means to keep it; his *Viola* was the most Lady Flora-like of them all, and *Magnificent* the richest. Messrs. Frasers' were splendid; Dobson's, ditto; Bragg's, very like them, and the only one who had *Una*, with which he matched *Vesper*. Mr. Cutbush, of Highgate, had a kind called *Brenda* to match his *Sanspareil* which I never saw before. Another, called *Rose-leaf*, in Mr. Wiggin's collection, was very highly coloured.

SEEDLING PELARGONIUMS.—*Mr. Marnock* (Turner's)

is a conspicuous red flower, with dark markings as in *Sanspareil*, or in the new French kinds. *Rose Celestial* (Turner's), best purplish; *Richard Benyon* (Hoyle's), fiery scarlet; *Era* (Beck's), best white; and *Bride* (Beck's), best circle, also a white flower.

MISCELLANEOUS.—There was a remarkable streaked Petunia, called *Attraction*, from Mr. Turner, twelve or thirteen collections of Ferns, and the best of them all was *Gleichenia flabellata* in a collection of fine-foliaged plants by Mr. Parker, of Hornsey. His *Dracena ferrea* was a splendid specimen, his *Bromelia sceptum* a rare picture of superior management, and his *Puya Bonplandi* is one of the finest of that class of Pine-Apple-looking aspect. Mr. Morris had an *Acacia lophantha*, the oldest plant in cultivation, brought out as it most certainly never was brought out before in a pot; it might be ten feet high, and fifteen feet across the bottom branches just over the pot! I mention it to say how often I had exclaimed that these shows did us old gardeners a vast deal more harm than ever they did good to the Cockneys. All the good old plants were cast off because they did not happen to flower in May and June to go to the Flower Shows. "The flowers of my childhood," the home decoration flowers, and the flowers for forcing might all go to Jericho and back again, and not be worth a button, unless they were circles, or came in for competition. I had a long conversation on this subject with Sir Joseph Paxton, who sees the thing exactly in the same light as I do, and he told me that in his own garden at Sydenham, and in the Crystal Palace gardens, and with all his influence he made up his mind to stem the abuse of shows, and to gather, classify, and arrange all the "spring flowers," get them improved and made popular among the people, as we of the Experimental are doing already, and as I hope Mr. McEwen will soon commence at Chiswick. I cannot expect much at or from Kew or the Regent's Park, for there botanic science must first be attended to, and "Nature makes no leaps." The honourable member for Coventry moved a resolution that the Crystal should assist the Experimental, and that the latter should not be under "obligations" to the former. I seconded this motion, which passed unanimously, and the "house" resumed by "counting out" the Cape Heaths thus: *ventricosa* of sorts, numerous *mundula*, *Beaumontiæ*, *vestita* of sorts, *tricolor* ditto, *Vernonii*, *perspicua*, two sorts, *elegans*, *suaveolens*, *Bergiana*, *Albertus*, *propendens*, *depressa*, *Cavendishii*, *longiflora*, *tortulæflora*, *breviflora*, *jasmnoides*, *Batemani*, and so on; a large number of best Heaths for one month. One *Albertus* in the first prize collection of sixes, from Mr. Laybank, was full seven feet across, and his others were from four to five feet in diameter. As the collections of stove and greenhouse plants, the Orchids, and the extras will be staged again at Chiswick, and as the list of winners will be published, I need not give them here.

The company was above twelve thousand, and very select, this being a half-guinea day. The garden was nearly cleared of spring flowers, and the bedding-out plants were just beginning to be planted. All the oblong beds in the bottom of the centre portion of the garden, filled with brown Wallflowers and edged with *Cheiranthus Marshallii*, had a very fine effect, and looked at a distance as if filled with brown and yellow Calceolarias. The tree Pæonies, the Rhododendrons, Weigelas, and Azaleas made gay masses all over the lower gardens, and the whole of the fountains at play for half an hour in the afternoon were magnificently grand, and far better than on the first trial when the Queen was there. The whole arrangement for the Show was also much improved. The large Orange trees and others in tubs were brought out in lines to flank the stages, and, with an awning of canvass over the plants, the glare of the Palace, which took off much of the effect on former

occasions, was done away with, and the Crystal Palace is thus, after all, the very best place to see everything to the best advantage. If the canvass over the plants in the nave had been three feet higher from them, and in the form of a span-roof, as in the transept, nothing could have been more complete.

D. BEATON.

MANCHESTER BOTANICAL AND HORTICULTURAL SOCIETY'S SHOW.

THE above Society held a grand Floral Fête on Tuesday and Wednesday, the 25th and 26th of May last, in their beautiful gardens at Old Trafford, adjoining the site of the world-famed collection of Art Treasures now exhibiting.

I had the pleasure of visiting this Floral Fête, and was so delighted with the fine display of plants, flowers, and fruits, that I spent both days taking notes, and I only trust our readers will be as well pleased with my endeavours to describe them as I was in seeing them.

The subjects were admirably arranged in a large, handsome, glass-covered building, erected by the Society purposely for such exhibitions; and though it is so large, covering a quarter of an acre, they were obliged to put up three large additional canvass-covered marquees to hold the remainder of objects that were brought from various parts of the kingdom for exhibition.

The principal exhibitors were Messrs. Lucombe, Pince, and Co., of Exeter, and to their immense collections my attention was first directed. To attempt to describe every specimen in this vast assemblage would occupy space enough to fill an entire number of THE COTTAGE GARDENER; therefore I must condense my notes, however reluctantly, and merely state that they sent upwards of thirty Orchids in full bloom, chiefly consisting of twenty-six plants of *Cattleya Mossiae* of various shades of colour; a good plant of the rare *Cattleya superba*, with four of its rich-coloured blossoms; the beautiful *Lælia cinnabarina*, with twelve spikes of flowers; the *Epidendrum macrochilum*, with four spikes of its sweet-scented blossom; a large *Saccolabium guttatum*; and several others of less note. Of stove plants they sent a magnificent plant of *Medinilla magnifica*. In greenhouse plants they had eighteen *Azalea Indica*, splendid plants, averaging five feet in height by four feet in width, most admirably grown, and covered with bloom; also four *Erica depressa*, profusely covered with golden blossoms, three feet by three feet; two *Erica Cavendishii*, five feet by five feet, equally well bloomed; seven *Pimeleas* of various species, well bloomed; also *Boronias*, *Eriostemons*, and various other tribes; an extraordinary standard plant, with a large head well bloomed, of *Acacia hispidissima*, very like the one known in the trade as *Acacia grandis*. This was a most striking and effective plant. At each corner of the collection stood two lofty plants of *Arundo donax variegata*: these had a good effect. A new plant to me was amongst them, named *Callitris virgata*, with white starry flowers, very neat and pleasing on account of its drooping, graceful habit. There was also a noble plant of *Franciscea confertifolia*, with scores of heads of bloom on it.

On a grass plot near the great Exhibition building Messrs. Lucombe and Co. displayed more than a hundred of the best Coniferæ, many of them very rare and very fine specimens. I may just mention a few of the most remarkable. *Arthrotaxis selaginoides*, from Tasmania, eight feet high. This plant is valued at 100 guineas. *Dacrydium Franklandii*, from the same country, six feet high. This is like a drooping Willow in habit, and is very curious and interesting. *Picea Nordmanniana*, two plants, four feet high by five feet wide, well feathered to the ground; a pair of *Araucarias*, in large boxes, eight feet high; two good specimens of the wonderful *Wellingtonia gigantea*; and a good specimen of the rare *Thujiopsis borealis*, from Hudson's Bay, handsome, a Lycopod; *Picea nobilis*, four feet; *P. amabilis*, &c.

How Mr. Pince managed to get this immense collection conveyed safely and in such perfection from Exeter to Manchester is almost miraculous: scarcely a blossom was crushed or even injured. I was informed the whole were sent *not for competition*. A more spirited, disinterested, and patriotic act to advance the knowledge of horticulture never was ex-

hibited by any nurseryman. Great praise is due to Messrs. Lucombe, Pince, and Co. for their liberality.

Sir Joseph Paxton also sent a large collection of plants *not for competition*, consisting of a dozen Orchids, of which I may name *Aërides virens*, with twelve spikes; *Phalænopsis grandiflora*, seven spikes; the rare *Lælia purpurata*, with four large beautiful flowers; *Oncidium ampliatus major*, three immense spikes; *Vanda Roxburghii*, several plants of both the red-lipped and blue-lipped varieties; also six large, well-bloomed *Azaleas*, and an extraordinary specimen of *Sarracenia purpurea*, two feet across.

There were in new plants the following:—

A good specimen of *Genetyllis tulipifera* from Messrs. Lucombe and Co. This was a dense bush, two feet by two feet, covered most closely with its Tulip-like blossoms. The blooms were the most highly coloured of any I ever saw.

Lælia Brysiana, an Orchid, from T. Brocklehurst, Esq., of the Fence, near Macclesfield, resembling *L. purpurata*, but the sepals and petals are different in form, and of the purest white colour; the lip longer, and the purple spots broader and more dense in hue. Obtained the first prize.

Cattleya Lawrenciana.—Sepals and petals a delicate peach colour; the lip rosy purple; approaches nearest in general habit to *C. crispa*. Exhibited by R. S. Yates, Esq., of Stretford, in Manchester. This is a distinct and beautiful variety.

Ouvirandra fenestralis (The Lattice plant).—A good specimen of this elegant and curious under-water plant came from T. Ashton, Esq., of Hyde, near Manchester. The roots were in gravel at the bottom of the vessel, and the plant formed a curious-looking herbaceous skeleton, growing in, not floating on, the surface of the water. Received an extra prize.

COLLECTIONS.—NURSERYMEN.

TWELVE STOVE AND GREENHOUSE PLANTS.

The great prize of the day, competed for by Mr. Cole, Manchester, first; and Mr. Cutbush, of Barnet, near London, second; both collections exceedingly creditable. Mr. Cole's best were *Aphelexis macrantha purpurea*, *Leschenaultia intermedia*, *Azalea Conqueror*, *Erica perspicua nana*, *E. campanulata*, *Allamanda cathartica*, and *Polygala Dalmatiana*, all excellent, doing credit to Mr. Cole, who was formerly gardener to H. Collyer, at Dartford, Kent. Mr. Cutbush is, comparatively speaking, a young grower, but his collection was very fine. The best were *Azalea Trotteriana* and two others, *Erica Cavendishii*, *Clerodendrum fallax*, *Allamanda neriifolia*, *Leschenaultia formosa*, *Dillwynia rudis*, and *Chorozema varia nana*. Mr. Cole had a third prize adjudged to him for twelve plants similar in kind, but much smaller.

COLLECTIONS OF EIGHT STOVE AND GREENHOUSE PLANTS, ALSO TO NURSERYMEN, OF SIMILAR KINDS.

The candidates for these prizes were the same, and they stood in the same relative position, namely, Mr. Cole first, Mr. Cutbush second, and Mr. Cole third. Amongst the first was a beautiful specimen of that difficult-to-grow plant, the *Acrophyllum venosum*, and a good *Pimelea Hendersoni*. In the second I noted *Genetyllis Hookeriana*, a rare plant, with dull crimson, drooping flowers; and a good *Eriostemon pulchellum*.

COLLECTIONS OF TEN VARIEGATED AND ORNAMENTAL PLANTS.

Of these highly ornamental fashionable plants the nurserymen produced three collections. Mr. Cutbush was first; Mr. Fisher Godwin, of Sheffield, second; and Mr. Cole third. Mr. Cole had good plants of *Philodendron retusum*; the striped *Hydrangea*, very fine; *Croton pictum*, *Caladium pictum*, *C. bicolor splendens*, and *Ananassa sativa variegata*. Mr. Godwin sent a fine *Aralia trifoliata*, *Pandanus utilis variegata*, *Ropala magnifica*, and *Dracæna terminalis*; and Mr. Cole had *Caladium hamæstigma*, *Croton discolor*, and the beautiful *Sonerila margaritacea*.

COLLECTIONS OF SIX ORCHIDS.

Mr. R. Yates sent two collections in good order, and was awarded the first and second prizes for *Dendrobium Devonianum*, a good specimen, well bloomed; *Oncidium luridum guttatum*, with three long spikes; *Dendrobium albo-sanguineum*, well bloomed; *Calanthe veratrifolia*; *Cattleya Mossiae*; *Dendrobium clavatum*, rare; *Saccolabium guttatum*;

Aërides virens; and a large *Phaius Wallichii* with four spikes of flowers.

COLLECTIONS OF TEN PELARGONIUMS.

Second prize to Mr. Cole, for *Grandis*, *Rachael*, *Jehu*, *Christine*, *Virgin Queen*, *Duchess of Sutherland*, *Empress*, *Lablache*, *Monte Christo*, and *Queen of May*; good plants, but scarcely in bloom.

COLLECTIONS OF SIX HARDY RHODODENDRONS.

First and second prizes awarded to Mr. Yates. The best amongst them were *Attila*, *maculatum*, *purpureum*, *Velasquez*, *Lowii*, *elegans*, and *bicolor*.

COLLECTIONS OF EIGHT ROSES IN POTS.

The only nurseryman that exhibited was Mr. Lane, of Berkhamstead, and the plants were large and healthy, and the blooms as perfect as possible, especially when the distance they had travelled was considered. The kinds were *Juno*, *Louis Peronnay* (very large blooms), *Souvenir d'un Ami*, *Queen Moiré*, *Lamarque*, *Baronne Prevost*, and *Chenedolle*.

COLLECTIONS OF TWELVE EXOTIC FERNS.

These were very well grown, and exhibited in the best condition. There were two competitors, namely, Mr. H. Massey, of Hyde, first; and Mr. F. Godwin, of Sheffield, second. Mr. Massey had *Gymnogramma tartarea*, *Adiantum curvatum*, *Pteris aspericaulis*, *Cassebeera farinosa*, *Darea cicutaria*, and *Gymnogramma chrysophylla*. Mr. Godwin sent *Cænopteris vivipara*, *Asplenium Balangerii*, *Adiantum trapeziforme*, *Cheilanthes lendigera*, *Adiantum pedatum*, and *Notholaena nivea*.

AMATEURS' CLASSES.

COLLECTIONS OF EIGHT STOVE AND GREENHOUSE PLANTS.

Three collections were exhibited by J. Watts, Esq., of Abney Hall, near Manchester, first; H. Micholls, Esq., Manchester, second; and S. Ashton, Esq., Hyde, third. These collections were all good, fit for any exhibition, and did the growers great credit. The best in Mr. Watts's collection were *Aphelexis macrantha*, *Eriostemon neriifolium*, *Erica ventricosa grandiflora*, *Boronia serrulata*, *Polygala cordifolia*, *Medinilla magnifica*, and *Clerodendrum Kämpferi*.

The best of Mr. Micholl's plants were *Medinilla magnifica*, a splendid plant: there was a peculiarity about its blooming, the spikes not only coming from the ends of the shoots, but also out of the bare branches; *Erica Bergiana*; *E. Cavendishii*, finely bloomed; *Calanthe veratrifolia*; *Phaius Wallichii*; and *Aphelexis humilis*.

Mr. Ashton had a good *Pimelea Hendersoni*, *Azalea Symmetry*, *Erica propendens*, *Eriostemon neriifolium*, and *Aphelexis purpurea*.

COLLECTIONS OF FOUR STOVE PLANTS.

In these the worthy Mayor, Mr. Watts, again took the first prize. The plants were as well grown and bloomed as any ever seen at any exhibition; so said the Judges as well as your reporter. They consisted of a dense bush of *Franciscea confertifolia* covered with blooms; *Mussaenda frondosa*, white, with its bracteose leaves; *Allamanda neriifolia*, densely grown and bloomed; and a noble *Clerodendrum Kämpferi*. Mr. Micholls had good *Allamanda cathartica*, *Cyrtoceras reflexum*, and *Clerodendrum fallax*.

COLLECTIONS OF FOUR GREENHOUSE PLANTS.

Of these there were five collections of various merit. The Judges I am sure had a severe task to determine the rank each should occupy. Though only three prizes were offered they gave to them all prizes, and deservedly too.

First, A. Fairrie, Esq., of Liverpool. These were all large, well-bloomed plants, namely, *Epacris miniata*, four feet by four feet; *Aphelexis humilis*, three feet by three feet; *Eriostemon neriifolium*, three feet by two feet; and *Acrophyllum venosum*, two feet by one foot and a half.

Second, James Watts, Esq., Abney Hall, *Pimelea Drummondii*, a neat bush, well bloomed; *Pimelea mirabilis*, densely bloomed; *Eriostemon pulchellum*; and *Polygala cordifolia*.

Third, F. Bell, Esq. In this collection were a good *Pimelea Nippergiana*, a pretty *Tetralthea verticillata*, and a neat *Leschenaultia formosa*. N.B.—The labels to this col-

lection were much admired; they were printed black on a green card, and were very neat and ornamental.

Extra prize, H. Micholls, Esq. Second, S. Brooks, Esq. The best were *Tetralthea verticillata*, *Boronia tetrandra*, *B. Drummondii*, *Chorozema varia nana*, *Eriostemon pulchellum*, and *Plumbago Capensis*, well managed.

COLLECTIONS OF FOUR ORCHIDS.

Exhibited by S. Ashton, Esq., first; A. Fairrie, Esq., second; and S. Ashton, Esq., third. Mr. Ashton sent *Lalia purpurata* finely bloomed, and a fine species it is; *Saccolabium guttatum*, with six long spikes; *Phalænopsis grandiflora*, a good well-bloomed plant; and *Aërides Fieldingii*, with two long spikes of deep rose-coloured, large flowers, a fine new species.

COLLECTIONS OF EIGHT VARIEGATED AND ORNAMENTAL PLANTS.

The amateurs in these collections certainly surpassed the nurserymen. The exhibitors were H. Micholls, Esq., first; S. Ashton, Esq., second; and the Duke of Sutherland, Trentham, third.

Mr. Micholls had fine specimens of *Sonerila margaritacea* one foot and a half across; *Sarracenia flava*, *Cypripedium barbatum*, *Croton pictum*; *Anæctochilus xanthophyllus*, very fine; and *Anæctochilus Lowii*, large foliage.

S. Ashton, Esq., sent fine plants of *Cissus discolor*, three feet by two feet; *Cephalotus follicularis*, a large pan full of plants; *Begonia splendens*, noble foliage; *Begonia Reichenheimi*; and *Sonerila margaritacea*.

From Trentham there were *Heliconia Braziliensis*, *Canna Warsewiczii*, *Bromelia variegata*, *Caladium bicolor*, *Pandanus Javanicus*, and *Maranta zebrina*.

COLLECTIONS OF FOUR GREENHOUSE AZALEAS.

Three prizes were offered, and five collections exhibited; the two latter had extra prizes awarded.

First prize to H. Micholls, Esq. This collection was exceedingly well bloomed, reminding me of plants of this class exhibited in Mrs. Lawrence's day. They consisted of *Coronata*, *Exquisita*, *Apollo*, and *Lateritia*. Second, Duke of Sutherland, *Prince Albert*, *Rosea punctata*, *R. superba*, and *R. Iveryana*. Third, *Exquisita*, *Ardens*, *Iveryana*, and *Lateritia*. First, extra, H. Micholls, Esq. Second, ditto, W. Bradshaw, Esq.

COLLECTIONS OF FOUR CAPE HEATHS.

All the plants in these collections were well grown, compact, neat, and finely bloomed.

First prize awarded to F. Bell, Esq. They consisted of *Erica Cavendishii*, *E. elegans*, *E. jasminiflora nana*, and *E. tricolor rubra*. First, equal, was also awarded to S. Ashton, Esq., for a splendid *E. odora rosea*, the best-grown plant of its kind ever seen; *E. elegans*, *E. ventricosa coccinea minor*, and *E. Cavendishii*. The Judges were obliged to give these two collections equal first prizes—they could not determine either to be superior to the other. Second, F. Bell, Esq., small, neat, well-bloomed plants, consisting of *E. Bergiana*, *E. Sprengelii*, *E. Cavendishii*, and *E. ventricosa grandiflora*. Third, A. Fairrie, Esq., large fine plants, but not well formed. They were *E. vestita rosea*, *E. Albertii*, *E. denticulata moschata*, and *E. perspicua nana*.

SINGLE SPECIMENS—STOVE.

First prize, James Watts, Esq., Mayor of Manchester, *Medinilla magnifica*, splendid plant, with thirty spikes of bloom. Second, Mrs. Sharp, *Ixora coccinea*, twenty heads of bloom. Third, Miss Ashworth, *Stephanotis floribunda*, trained round a globular trellis and covered with bloom.

SINGLE SPECIMENS—GREENHOUSE.

First, J. Watts, Esq., *Aphelexis macrantha purpurea*, four feet by four feet, well bloomed. Second, S. Ashton, Esq., *Polygala Dalmatiana*, a good, well-grown plant. Third, C. Shorrocks, Esq., *Boronia tetrandra*.

SINGLE SPECIMEN GREENHOUSE AZALEAS.

First prize, J. Watts, Esq., a noble plant of *A. Perryana*, five feet by four feet. Second, Duke of Sutherland, a smaller plant of the same kind, well bloomed. Third, S. Brooks, Esq., Moss Side, Manchester, a good plant of *A. refulgens*.

SINGLE SPECIMEN CAPE HEATHS.

First prize, J. Watts, Esq., for a beautifully-grown *Erica*

aristata major. First ditto to ditto, for a noble plant of *E. Cavendishii*, five feet by five feet.

SINGLE SPECIMEN ORCHIDS.

First prize, T. Brocklehurst, Esq., Fence, Macclesfield, *Lælia Brysiana*, new and rare. Second, A. Fairrie, Esq., *Phalenopsis grandiflora*, with seven spikes of bloom. Third, J. Hutton, Esq., for ditto.

COLLECTIONS OF TWELVE EXOTIC FERNS.

In these plants the amateurs evidently surpassed the nurserymen. Three excellent collections were exhibited by C. Shorrocks, Esq., first; S. Ashton, Esq., second; and S. Ashton, Esq., third. The reader will observe that the Council have not restricted any exhibitor, whether nurseryman or amateur, from exhibiting twice or even thrice in the same class. This is done, I suppose, to obtain a good show, and, if so, the object was certainly achieved.

Mr. Shorrocks's collections contained the following rare species:—*Gymnogramma Mertensii*; *G. Peruviana*, a new and beautiful Silver Fern; *Cheilanthes spectabilis*, *Cassebeera farinosa*, and *Pteris aspericaulis*.

Mr. Ashton sent *Adiantum curvatum*, *A. cuneatum*, *Pteris aspericaulis*, *Cheilanthes micromeria*, *Balanium culcitum*, *Gleichenia flabellata*, *Gymnogramma Peruviana*, and *Asplenium Balanigerii*.

COLLECTIONS OF SIX EXOTIC LYCOPODIUMS.

Exceedingly beautiful and fine specimens. These collections were exhibited by C. Shorrocks, Esq., first; H. L. Micholls, Esq., second; and S. Ashton, Esq., third.

Mr. Shorrocks's plants were grown in wide pans two feet across, and so dense were they that they hung over the sides of the pots, almost hiding them from view. There were the usual species. I did not observe any new kinds amongst them.

AMATEUR CLASSES.

COLLECTIONS OF SIX PELARGONIUMS.

Three collections were there exhibited by H. Micholls, Esq., first; J. Fallows, Esq., second; and S. Brooks, Esq., third. Nice, healthy, bushy plants, but hardly in bloom. The best sorts were *Loveliness*, *Carlos*, *Chieftain*, *Sanspareil*, *Ambassador*, and *Springfield Queen*.

COLLECTIONS OF SIX FANCY PELARGONIUMS.

Only two collections were exhibited, by the Duke of Sutherland, first; and S. Brooks, Esq., second. The plants from Trentham were fine, such as we have seen at Regent's Park, well bloomed, and of a good form. The best were *Lady Downs*, a dark flower; *Lady Hume Campbell*, ditto; *Princess Galitzin*, light; *Annette*, ditto. Mr. Brooks sent good *Fairy Queen*, *Bouquet tout fait*, *Bride*, and *Madame Mieliez*.

COLLECTIONS OF SIX CINERARIAS.

These plants were exceedingly well grown, and blooming profusely. Exhibited by Jas. Watts, Esq., first; M. Crossfield, Esq., second; and T. B. Potter, Esq., third. The best varieties were *Optima*, rose and white; *Lord Palmerston*, blue; *Magnum Bonum*, crimson self; *Lady Camoys*, blue and white; *Lord Stamford*, white, edged with blue; *Novelty*, purple; *Lady Paxton*, white and red.

COLLECTIONS OF SIX CALCEOLARIAS.

These were all seedlings, and were nice, bushy, well-grown, and freely-bloomed plants. There were three collections. First prize, G. Crossfield, Esq.; second, Duke of Sutherland; third, James Watts, Esq.

COLLECTIONS OF SIX ROSES IN POTS.

Small plants, tolerably well bloomed. First prize awarded to R. F. Rufford, Esq., for *Adam*, *Madame St. Joseph*, *Yellow China*, *Bride of Abydos*, *Smith's Yellow Noisette*, and another. Second, to J. Fallows, Esq., for *Eugène Desgaches*, *Général Castellane*, *Moss Celine*, *Mrs. Bosanquet*, *Gén. Jaqueminot*, and *Auguste Mie*.

COLLECTIONS OF SIX GLOXINIAS.

These lovely plants were shown in fine condition and well bloomed, the upright-flowering varieties preponderating. The first prize was adjudged to J. Mayson, Esq., for *Victoria Regina*, *Prince of Prussia*, *Violante superbe*, *Carminata splen-*

dens, *Wilsoni*, and *Field Marshal*. Second, James Watts, Esq., for *Mirabilis*, *Grand Sultan*, *Flammea*, *Duke of Wellington*, *Lady Franklin*, and *Cerulea alba*. Third, Miss Ashworth, for *Delecta*, *Helen d'Orleans*, *Field Marshal*, *Maria*, *Cerulea*, *Ignescens*, and *Coronaria*.

COLLECTIONS OF TWENTY-FOUR CUT PANSIES.

Excepting some bouquets these were the only cut florists' flowers present. The Tulip show was to take place on the 29th, so I cannot give a report of them. Pansies were good, as might have been expected by the favourable weather we have had of late. The first prize was obtained by H. Brundrett, Esq., of Runcorn, a good even stand of large, well-formed flowers, consisting of *Star*, *Duke of Perth*, *Miss Walker*, *Yellow Supreme*, *Sankey Hero*, *Lilian*; *Sunbeam*, a seedling, yellow ground with chocolate margin, large and good; *Princess*, *Father Gavazzi*, *Brunette*, *Lady Emily*, *Mesmerist*, *King of Yellows*, *Grappenhall Hero*, *Alba magna*, *Joan of Arc*, *Blue Perfection*, *Sir Colin Campbell*, *Earl of Mansfield*, *Jeanne Pomona*, *Princess Royal*, *Fearless*, and *Sir Joseph Paxton*. Second, Joseph Walsh, Esq., Bury. Third, C. Howard, Esq., Sale.

FRUIT.

The show of fruit was not large, but the Pines, Grapes, Peaches, Nectarines, Melons, Strawberries, and Apples were generally very good for the season. Twenty-four Pines were exhibited.

The first prize for a collection was awarded to Mr. Jennings, gardener to the Earl of Derby, for a good Montserrat Pine, a dish of Cherries, six Royal George Peaches, a good bunch of Sweetwater Grapes, a very fine bunch of Black Hamburgh Grapes, and two large Shaddocks scarcely ripe.

An extra prize for a collection was awarded to Mr. Fleming, gardener to the Duke of Sutherland, for one dish of Circassian Cherries, one dish of Ingram's Prince of Wales Strawberries, one dish of Violette Hâtive Nectarines, one dish of Royal George Peaches, one Trentham Hybrid Melon, and a good bunch of Black Hamburgh Grapes.

BLACK HAMBURGH GRAPES.

First prize, Mr. Fleming. Second, Mr. Jennings. Third, C. Andrews, Esq.

WHITE GRAPES.

First, Muscats, to Mr. Jennings. Second, Mr. Jennings, for Muscadine Grapes. Third, Sweetwater Grapes, to J. R. Kay, Esq. One bunch of Grizzly Frontignan Grapes, J. Dugdale, Esq., Liverpool.

VEGETABLES.

Cucumbers were plentiful, and generally good. Manchester is rather famous for this vegetable.

The first prize was won by Mr. H. Massey, a nurseryman, for Champion of England. Second, J. Dugdale, Esq. Third, Thos. Bazley, Esq.

COLLECTIONS OF VEGETABLES.

Three prizes were offered, but only two exhibited. The first prize was justly adjudged to John Harrop, a cottager. He had beautiful new Potatoes, good Asparagus, Rhubarb, Cabbages, Lettuces, &c. Second, C. C. Worsley, Esq.

RHUBARB.

This useful vegetable was exhibited in great quantity, and was very fine.

First prize, C. Shorrocks, Esq. Second, F. Bell, Esq. Third, S. Brooks, Esq.

EXTRA PRIZES.

As there were many articles of merit that did not come under the Society's schedule, the Judges were, as was quite right, directed to give them extra prizes.

I shall only do justice to the exhibitors by at least giving their names, and the articles for which the extra prizes were awarded.

T. Brocklehurst, Esq., Fence, Macclesfield, for *Cypripedium Lowi*.

T. Brocklehurst, Esq., Fence, Macclesfield, for *Cypripedium villosum*, new.

Miss Ashworth, for a fine *Dendrobium nobile*.

F. T. Rufford, Esq., for *Gymnogramma Peruviana*, new and fine.

T. E. Pickford, Esq., for six Lycopodiums.

H. L. Micholls, Esq., for a bouquet of Orchids, cut flowers.

T. Bell, Esq., for four bouquets of cut flowers, beautifully arranged.

Mr. R. S. Yates, nurseryman, for a fine bouquet of cut Roses.

C. C. Worsley, Esq., and Mr. R. S. Yates, for Apples. Both in excellent keeping condition.

Josh. Railton, Esq., for a fine dish of Mushrooms.

S. Brooks, Esq., for a large Prince Albert Pine Apple.

Duke of Sutherland, for a good dish of Peaches.

C. Andrews, Esq., for a fine dish of Keens' Seedling Strawberries.

C. Andrews, Esq., for a fine dish of Sir Harry seedling Strawberries.

Mr. John Harrop, cottager, for a good Melon.

Mr. W. Cutbush, for a collection of *Anætochili*, viz., *intermedia*, *xanthophyllus*, *Lowii*, *cordata*, *argentea*, and *striata*.

Mr. G. Cunningham, nurseryman, Liverpool, for a cut specimen of a spotted seedling Rhododendron.

H. Micholls, Esq., for four greenhouse Azaleas.

W. Bradshaw, Esq., for four greenhouse Azaleas.

W. Bradshaw, Esq., for one stove plant.

H. Micholls, Esq., for one greenhouse plant.

Mr. W. Cutbush, for six Cape Heaths.

Mr. W. Cutbush, for a collection of new and rare plants, viz., *Maranta regalis*, *Oxylobium Osbornii*, *Diffenbachia variegata*, *Tradescantia discolor*, &c.

J. Fallows, Esq., for eight stove and greenhouse plants.

S. Brooks, Esq., for eight stove and greenhouse plants.

A. Fairrie, Esq., for eight stove and greenhouse plants.

H. Micholls, Esq., for four greenhouse plants.

H. Micholls, Esq., for eight ornamental plants.

R. T. Rufford, Esq., for a collection of cut Roses.

GARDEN STRUCTURES.

I was much pleased with two octagon vivariums or aquariums, each raised on a pedestal, and nearly five feet diameter. One was sent by Messrs. Sanders and Doughty, of London, and had a submerged rockwork in the centre. The sides above the pedestal are glass, through which various marine plants and zoophytes are visible. The second came from Mr. Alford, manufacturer, Portland Road, London. This was of the same form as the other; and in the water were scores of gold and silver fish of various ages all sporting about, and apparently quite happy and healthy. These stood as fixtures in the broad centre walk of the large glass-covered tent or building put up for exhibition purposes.

Mr. Howard, builder, of Chesterfield, sent a very neat and useful kind of Wardian case, or miniature hothouse. It was heated by a small boiler, with a spirit lamp and one-inch zinc pipes. Inside were several fine Ferns in pots. Air was given by means of one of the centre lights sliding open when the interior air became too hot. I have no doubt such a case would answer well for a light room or entrance-hall.

In conclusion, I think great praise is due to the Council and their active and indefatigable Secretary for the liberal way in which this excellent Exhibition was got up, arranged, and carried out. I was informed that the sum set out for prizes was £300. This is the grand secret of obtaining a good exhibition. Give good prizes, and then good articles will be sure to be sent to compete for them. These fine productions will bring a good company, and from them the means are then obtained to offer good prizes again. Thus all will work harmoniously together, and lessons of culture will be demonstrated palpably to cultivators, and the standard of excellence raised higher every year.

The Judges were Mr. Cunningham, of Liverpool; Mr. Fraser, Lea Bridge; Mr. Spencer, Bowood; Mr. Robinson, London; Mr. W. Barnes, of Camberwell; and Mr. Foy, Chatsworth.

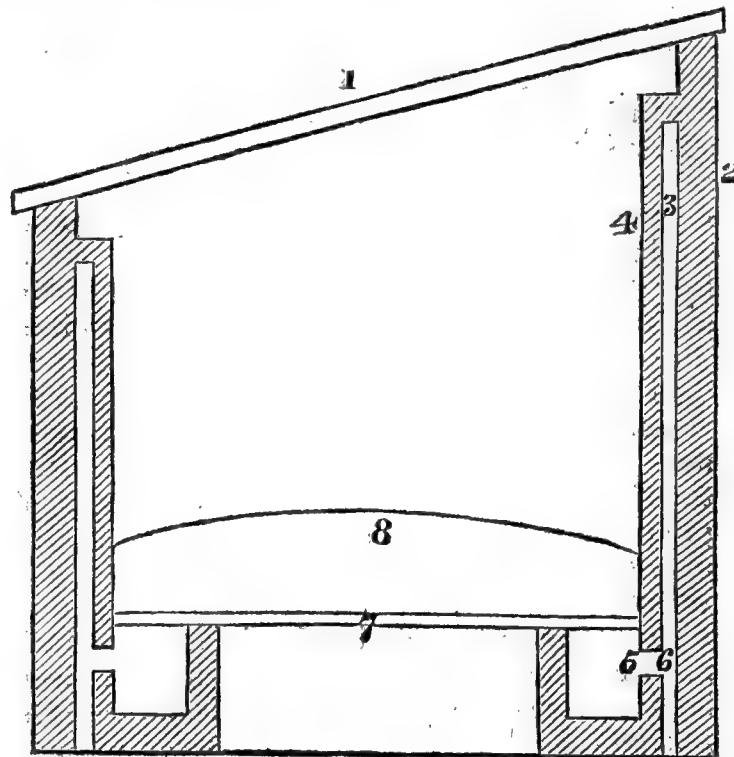
T. APPLEBY.

QUERIES AND ANSWERS.

INSUFFICIENT HEATING OF PITS.

"I built a pit this spring with the intention of growing Melons according to Mills' plan, but find that I cannot

obtain sufficient heat for the purpose. The accompanying sketch of section will show the principle. My boiler is a common cast-iron boiler, which, I suppose, has not power enough to heat the large body of water; and the consumption of fuel is so great that I fear it cannot answer as at present constructed. The pit is 23 ft. long by 6 ft. broad; the tank, going all round, is 9 in. wide and 8 in. deep. Will it answer my purpose to reduce the depth of the tank to 3 in., or must I have another boiler?"—A SUBSCRIBER.



1. Glass light.
2. Four-inch wall.
3. Hot-air chamber, 2½ in.
4. Brick on edge.
5. Hot-water tank.

6. Pigeon-hole work to let heat into chamber 3.
7. Boards laid across about one inch apart, over which is spread a little long litter to support
8. Bed of earth.

[Your pit is a very nice one, and is just such a one as I should like to grow Melons and Cucumbers in by dung heat, that dung being chiefly placed against the side walls, and an open place in the inside of the pit below the earth, or filled with rubble or stones, for receiving and retaining the heat from the outside linings. Where labour is plentiful, and manure likewise, fine results may be obtained from such a pit. Your case presents several features likely to be interesting to others as well as yourself.

The question tanks *versus* pipes might by your case be farther elucidated if you would give us an account of the expense your tank and chambering cost you. A tank nearly 60 ft. in length, 9 in. wide, and 8 in. deep, with whatever material constructed, must be rather expensive; and the securing a chamber all round communicating with the tank between the outside and internal wall, so as to give top heat to the pit, would also be an additional expense. As, however, a tank four inches deep, or even three, would have answered your purpose quite as well, the difference in expense from a shallower tank may also be taken into consideration. Now, as by the tank system you have no divisions, but heat your pit throughout at once, so the same fact should be kept in mind in estimating the expense of pipes. Two three-inch pipes would give a sufficiency of top heat for such a pit, or two four-inch if forcing was commenced early, say about Christmas, or before; and two three-inch pipes would do for bottom heat. These might be used together, or independently of each other. It would next be necessary to ascertain for what these could be bought and fixed. If the bottom pipes were encased in rubble, brickbats, &c., there would be no occasion for flooring of any kind over them. Any simple means of getting water amongst that rubble will always secure moist bottom heat, and moist top heat likewise, though that could also be secured by evaporating pans fixed on the top pipes. There seems to be a deficiency in securing this atmospheric moisture when necessary, which you could easily obtain by stop plugs, to open at pleasure, at the top of your chamber, back and front (3).

Kind and setting of boiler.—So far as I understand your description, with the exception of the flanges for a flow and return pipe your boiler differs little from a fair-sized do-

mestic pot in Scotland some eighteen inches in diameter, and as much in depth. I presume the lid is fixed securely, because if it is open it will require more fire to heat such a bulk of water. Provided the top was securely fixed extra power would be given by having the boiler placed some two or three feet below the level of the tanks to be heated. Any bricklayer who can set a washhouse copper would be able to set such a boiler to the best advantage. The fire should not only play on its bottom, but all round it; and the damper in the chimney should so regulate draught that as little as possible of the heat should get up the chimney, instead of being absorbed by the water. After all care, however, the boiler is one of the worst in shape, so far as economy in heating is concerned. Some people say that the *setting* is everything, and the form of the boiler nothing; but where quick heating and rapid circulation are of importance the form of the boiler has very much to do with it. Other things being equal, that boiler will be the most powerful which contains the *smallest* quantity of water, and exposes the *greatest* amount of surface to the direct action of the fire. A friend of ours, somewhat incredulous on this point, had a nine-inch-diametered tin teakettle so made that there was an open funnel of five inches in diameter through its centre. This was set on a brisk fire along with another teakettle of the same diameter, but without any open funnel through it. In the one case the water was hissing, steaming, and coming out in fierce jets before that in the common teakettle was well warmed. All the improvements made in boilers are more or less derivable from the principle embodied in that simple fact. Hence we have conical boilers, with the fire placed in their centre. Hence we have saddle-backed boilers, containing between the sides a space for only two inches or so of water, whilst the fire plays on the under side of the saddle, and then goes all round the upper side before it gets up the chimney. Hence, again, we had the late Mr. Weeks' oblong tubular furnace boiler, and the upright tubular boiler of the present Messrs. Weeks, presenting such a large surface to the action of the fire. Thus we had the oblong boiler, with the fire playing on its under side, and that saddle-backed, and then passing by a wide flue right through its centre, as described in Paxton's "Magazine of Botany" more than twenty years ago. A modification of this plan, but with the sides corrugated, was what I saw last year at Dalkeith. The retort boiler of Mr. Thomson is now much more simple. If you would suppose a fair-sized cannon cast with a vacuity for water between its inner and outer side, you would have no bad idea of this very simple boiler. Hang this cannon or retort boiler over the fire, let the fire play all over it, and then by a break be forced to come rushing through its centre, and you will see that by this, as well as the other modes mentioned, there can be no depth of water anywhere to heat, while the surface in one of these simplest amateurs' retort boilers is considerable. Your metal pot will hold more water, and have little surface in comparison. If properly set, however, it should heat such a house or pit, though the consumption of fuel would be a little more than for any of those mentioned. A small conical, an amateur's retort, or the smallest size of the Messrs. Weeks' would answer if you contemplate a change; and provided your furnace wanted lowering, or the top of your present boiler wanted fixing, it would be advisable to have a boiler with more surface at once. As, however, three or four inches of water will be quite deep enough in your tank (and this reduction you can effect without interfering with the tank at all), it would be advisable to try the present boiler fairly with such an amount of water before making any alterations, except having pigeon holes in the inner walls of your tank as well as the outer ones, that the heat may have free access to the chamber in the centre beneath the flooring, as well as into the narrow chambers for top heat.

General considerations.—Even then, unless we knew your mode of culture, we can see that you might have difficulty. The flooring of boards is the worst you could have for the conducting of heat. I would advise the openings to be more than an inch from board to board, and the spaces filled with pieces of slate, furnace clinkers, broken bricks, &c. Even then the bottom heat will not be so strong as if the bottom was formed of slate or iron, or if, after securing the top of the tank, the space between and over the tank was covered

to the depth of from twelve to eighteen inches with rough, clean rubble, laid as hollow as possible, and terminated with fine-washed gravel, over which a little sweet, longish litter might be placed to prevent the soil getting down.

According to your line of soil, at present that must average a depth of four feet from the glass, whilst it should scarcely be half that distance to give a sufficiency of sunlight to the Melons. Probably you intend training the plants to a trellis some eighteen inches from the glass, and in that case, though still a matter of some consequence, it is, nevertheless, of comparatively less moment at what depth the roots of the plants may be growing. If thus to be grown on a trellis the plants might be reared on a dung bed at one end. In fact, with the flooring and everything just as they now are, I should be strongly tempted to put from two feet to two feet and a half of sweet fermenting material over the flooring before the soil was introduced, and if such could be done I am sure that the Melons would never complain about it. Previous remarks about curtailing the space for the roots to run in will be worthy of attention.

I have noticed this inquiry at this length because the notion has been gaining ground that a vessel of any shape or size was suitable for a boiler; and hence the complaints of waste of fuel, and yet ineffective heating. Whatever kettles or pans are used let the tops or lids be fixtures, considerably below the pipes or tanks to be heated, and exposing as much surface to the fire, and containing as little water to be heated as possible.—R. FISH.]

MR. BEATON'S EXPERIMENTAL GARDEN.— DOUBLE RICHARDIA.—PREVENTING BARREN STRAWBERRY PLANTS.

"Our friend Mr. Beaton often speaks of the Experimental Garden, and as often as he does so he excites my curiosity. I should be much obliged if you will answer the following questions:—

- "1. Is it a private garden?
- "2. Can it be seen on application?
- "3. Where is it situated?

"4. Are the experiments mainly for the benefit of the subscribers to THE COTTAGE GARDENER?

"I have an Arum whose leaves stand fully four feet above the surface of the soil. It has three stems, or shoots, or whatever you may please to term them. Each has produced one flower, just now gone by, the tops of which reached the height of five feet. The plant was rested last autumn, and repotted in good rough stuff in November last, and was covered in the early part of April with a slight dressing of Burns's patent manure. The leaves are heavy and large in proportion to the height. Two years since this same plant produced a perfectly double flower.

"Can any of your writers tell me why many Strawberry plants from early runners of last year are barren, and whether or not they will fruit if left till next year?"—A CONSTANT READER.

- [1. The "Experimental" is a private garden.
2. It cannot be seen by application.
3. It is in the parish of Kingston-on-Thames.
4. The experiments are for the benefit of all whom they may concern.

"Scape" is the proper botanical term for the flower-stem of the "Arum," and *Richardia Æthiopica* is the proper book name of this "Arum." We do not recollect to have heard of a double Arum before. Many more besides you have, and have had barren Strawberries on those light, sandy soils of yours. Old and young plants are affected by the same cause—great drought; but for your "benefit" at least we may say that a complete preventive to barren Strawberries has been discovered in the Experimental Garden. As soon as you plant the runners water them well, and mulch them immediately one inch thick with the refuse of the cocoa-nut mills in your neighbourhood; tell them to give you the kind they supply to the Experimental Garden, where it is used for old and young, and for every experiment.]

NEW OR RARE GREENHOUSE PLANTS.

COLLECTORS of plants residing at a distance from the metropolis are often at a loss to know what new plants are really worth buying; and as greenhouses are far more common than stoves, so plants suitable for such a garden structure are happily also more plentiful. The Cape of Good Hope was formerly the great storehouse from whence collectors drew largely various species of plants to ornament the temperate clime of the greenhouse. From that prolific region we have the large tribe of Heaths, also Pelargoniums and Mesembryanthemums, and many others; but, on the discovery of the immense region now called Australia, the plants proper for the greenhouse have increased tenfold, and, with the exception of the Heaths, have almost superseded the Cape plants. Let the reader glance over a catalogue now, and compare it with Miller's Dictionary. He will find hundreds of Acacias, Blandfordias, Boronias, Bossiæas, Chorozeas, Daviesias, Dillwynias, Eriostemons, Gastrolobiums, Gompholobiums, Pimeleas, &c., that good old Philip Miller knew nothing of. Supposing a modern gardener tolerably acquainted with greenhouse plants was suddenly compelled to cultivate only plants known in the middle of the last century, I imagine he would think his show of bloom would be meagre indeed. I am, however, rattling away on my hobby-horse, and must come to a stop, or my list of new plants will come in at the tail end of my paper instead of occupying, as I intended when I began, the entire page. The first plant I will notice is

ANDROMEDA PHILLYREÆFOLIA (Phillyrea-leaved Andromeda).—This is a half-hardy, Myrtle-like, new shrub, with very dark-coloured leaves, and snow white blossoms, thus setting off each other by contrast to great advantage. It will live in a greenhouse without heat excepting in the severest frosts.

ANOPTERIS GLANDULOSUS.—Though not quite new, this handsome plant, with Fern-like leaves and white and pink flowers, is not so well known as it deserves. It has the desirable property of blooming in winter.

BEJARIA ÆSTUANS.—Bejaria should be pronounced as if there was no *j* in it, Be-aria. *Æstuens* means *glowing*, from the blossoms being of a rich, bright, glossy rose colour. The genus may be said to be the Heaths of Peru. This species is the handsomest yet known. It requires, however, to be of some size before it flowers freely.

BORONIA DRUMMONDII.—Lovely as most of the species of this charming genus are, this comparatively new one surpasses them all. Every greenhouse, however small, ought to contain a plant of it. I cannot too strongly recommend it. The foliage is almost as lovely as the finest Fern; its branches are delicately slender; and its blossoms are very numerous, even on a small plant, and of a bright rosy crimson colour. Unlike the *B. serrulata*, it is of the easiest culture.

CYCLAMEN ATKINSII.—Here is another charming plant well worthy of universal cultivation. It is a variety of *C. Persicum*, but comes true from seed. The flowers are beautifully striped, and the foliage is pretty, though smaller than its prototype. It is said to be hardy, but is so lovely, and flowers so much more freely in a greenhouse, that I would recommend it to be kept in the greenhouse always through the winter and spring until the bloom is over.

DAVIESIA FRAZERII.—A charming plant of neat habit, producing most abundantly long racemes of orange yellow and crimson flowers. The leaves are of the unusual colour of a glaucous or milky hue.

DAVIESIA HOOKERII.—This is a very dwarf species, of a compact habit, with long racemes of rich-coloured, pea-shaped blossoms. It is quite new, and a worthy plant of easy culture.

DESFONTANIA SPINOSA.—As its name imports, this is a thorny-leaved plant, very like a species of Holly. It has been lately introduced by Messrs. Veitch, but from its easy propagation is now generally cultivated. In the south of England no doubt it will live out of doors. The flowers are very distinct from the Holly, being of a tubular shape and crimson and yellow colour. Every way it is a very desirable plant, and should be in every collection.

DILLWYNIA SCABRA (rough).—A great acquisition from Australia. The stems and leaves are studded with protuberances; hence its specific name. Its flowers are of a rich scarlet, margined with yellow, produced in clusters of ten or twelve together. It is really a charming species, well worthy of cultivation.

GASTROLOBIUM DRUMMONDII.—A good addition to a good genus. The Gastrolobiums are amongst the tallest shrubs of New South Wales. This species is one of the dwarfest. The flowers are of a deep orange colour, with a pure white centre. They are produced in great profusion in short spikes.

GASTROLOBIUM LEEKIANUM.—Distinct and beautiful. The flowers spring in bunches from the axils of the leaves, and are of a dark, rich orange colour, veined with purple.

GASTROLOBIUM SPECTABILE.—Beautiful as many of the plants are that now ornament our greenhouses from Australia, this species is equal, if not superior to them all. It is of a dwarf, compact habit. The flowers are rather large, produced in spikes at the ends of the shoots. They are of a rich orange scarlet, very showy, and last a considerable time in bloom.

GENETYLLIS TULIPIFERA (Tulip-bearing).—A very singular and strikingly beautiful plant, producing large flowers shaped like a Tulip, only they hang downwards bell-fashion. They are pure white, variegated with crimson. The plant requires frequent stopping to induce it to form a compact bush. With a little management in that respect it will be a great ornament either on the stage at home or in the exhibition tent.

GOMPHOLOBIUM LINDLEYANUM.—This plant will be greatly valued as an exhibition plant when more generally known. It has a more dwarf habit than *G. barbigerrum*. The flowers are large, and of a rich yellow colour.

GOMPHOLOBIUM VENUSTUM.—A distinct species, and beautiful both in foliage and bloom. It is a sort of half climber, having slender, longish branches. The foliage has a Fern-like character, very neat and interesting. The flowers are produced in summer, and are of a shaded purple colour.

HEMIANDRA PUNGENS.—Dwarf and compact in habit, with small, neat foliage. Flowers in perfection for several months in the year. The flowers are of a bright lilac colour, with dark spots, useful for stage decoration and exhibition purposes.

LAPAGERIA ROSEA.—Mr. Beaton has described this plant and its culture so often and well that I need only say that I entirely agree with him. I may, however, add that it is decidedly the very best of all greenhouse climbers. The white variety is also equally beautiful.

LILIUM GIGANTEUM.—A noble-growing plant, with large heart-shaped foliage, and a flower-stem that I have seen ten feet high, with more than a dozen large, pendulous, long-tubed blossoms at the top. The colour white, sheathed in purple. A nobler and more striking plant I never saw.

T. APPLEBY.

(To be continued.)

DOUBTS ON STEWARTON WOODEN HIVES.

As the "COUNTRY CURATE," as well as many others, thinks the Stewarton hives made of thinner wood than recommended by bee authors, a few results of my experience with them may satisfy those who have got them that they need not be afraid. Bees, when properly managed in their boxes, will keep in winter or thrive in summer as well as in any other hive.

I have used the same hives as advertised in *THE COTTAGE GARDENER* these last ten years, and have never seen a single instance of one suffering from cold in winter, however severe. My bee house, holding six hives, is twenty-one feet long by five feet wide, the back and ends built of stone, the front of wood three-eighths of an inch thick, and an aperture of nine inches by six inches in each end for ventilation.

Now, the way I keep the boxes in this house is without covering of any kind, and they thrive remarkably well, while some of my neighbours cover theirs up with old clothes and such-like, and yet I consider my hives better kept than theirs who use such precautions.

A friend of mine of thirty years' bee experience, and whom I consider no mean authority on bee matters, told me last week, when talking to him on the thickness of wood for boxes, that he never knew a single instance of a hive suffering from cold any more in our box than in straw hives; but he thinks

they are more hurt by being kept in damp, ill-ventilated houses than in dry, airy ones.

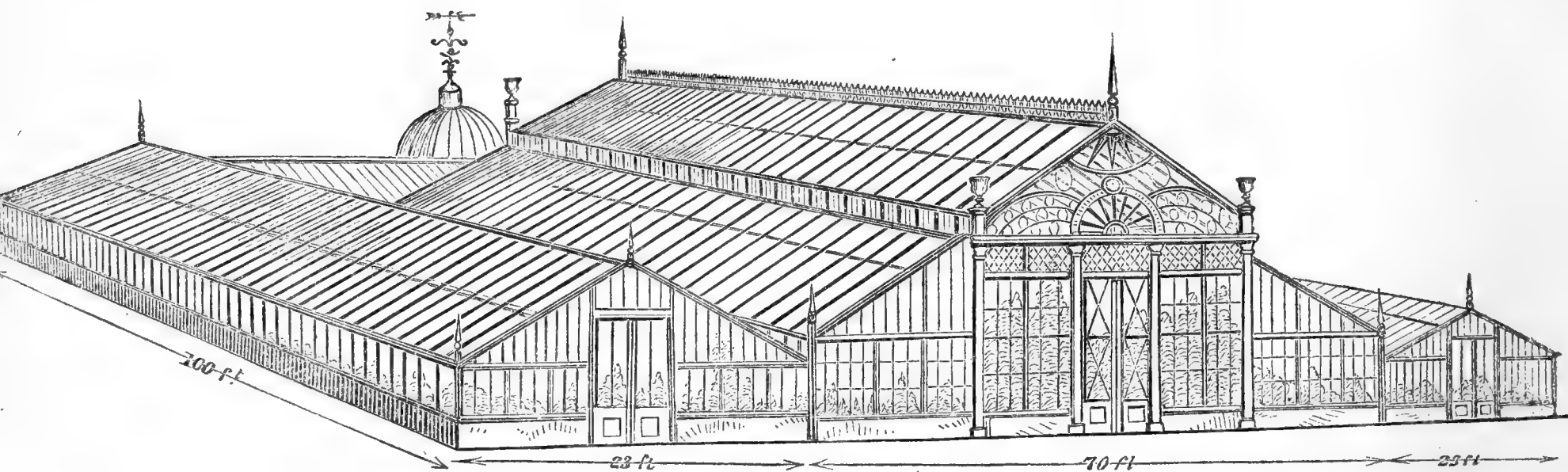
I tried a new plan last winter to help ventilation, and never saw the bees keep better. I bought your manual, "Bee-keeping for the Many," the best little treatise on bee management I have ever seen, though I have read everything on bees I could get, and I saw therein recommended an empty box put on the top of the hive, with a slide drawn at each side of the upper box containing the bees. I intended trying one of my hives as recommended; but before doing so I asked my friend if he had ever heard or tried the same plan. He replied that he had tried it often, and considered it good; therefore I put an empty box on every one of my hives last winter, both in and out of doors, and have never seen them keep better as regards the bees, and the comb is as good as if it was only newly made, although a person with ten or twelve hives must think himself pretty safe if no more than two are weak in spring out of the same quantity.

I think Mr. Wilson's remarks on uniting weak hives in spring will give the storifying system the preference over a good many others in saving the brood of both hives.

I shall be glad to become a member of the British Apian Society, and hope to have the pleasure of appearing among our English apian brethren this season with a good Stewarton box of honey-comb.—A. FERGUSON, *Stewarton*.

THE NEW WINTER GARDEN.

MESSRS. WEEKS AND CO'S NURSERY, CHELSEA.



THE foundation of this most beautiful and most appropriate plant house in the British Islands was being dug out when I called at the beginning of February, and by the middle of April the structure was completely finished and furnished. We have not another house like it in the kingdom, nor a better house for the growth of plants, or for showing them off to the best advantage, and for exercise and recreation in bad weather. This is just the style of show-house for a large nursery.

Perhaps the ugliest and the worst-arranged house of this kind in England is the "large conservatory" in the garden of the Horticultural Society. That in the garden of the Botanical Society in the Regent's Park was the most useful house we had; but, like the first Crystal Palace, there is no beauty in the elevation or design. If we could shut our eyes to everything but the cheapest and most useful things, why should a duke wear anything about his *hurdies* except corduroy? or what better could you find for a duchess than a comfortable, homespun linsey-woolsey dress? or what could you require better for the growth of exotic plants than a plot of ground covered with glass exactly as at the Regent's Park? It is a linsey-woolsey dress for such plants to the very last stitch. I make all comparisons on a

natural basis, as between one flower and another. I compare the Queen's dresses with three flowers—those of *Allamanda cathartica*, *Echites suberecta*, and *Argyrea ornata*. The former is satin, the second silk, and the third the ephemerals, or useful, elegant, and ornamental, but all of the most beautiful form and symmetry.

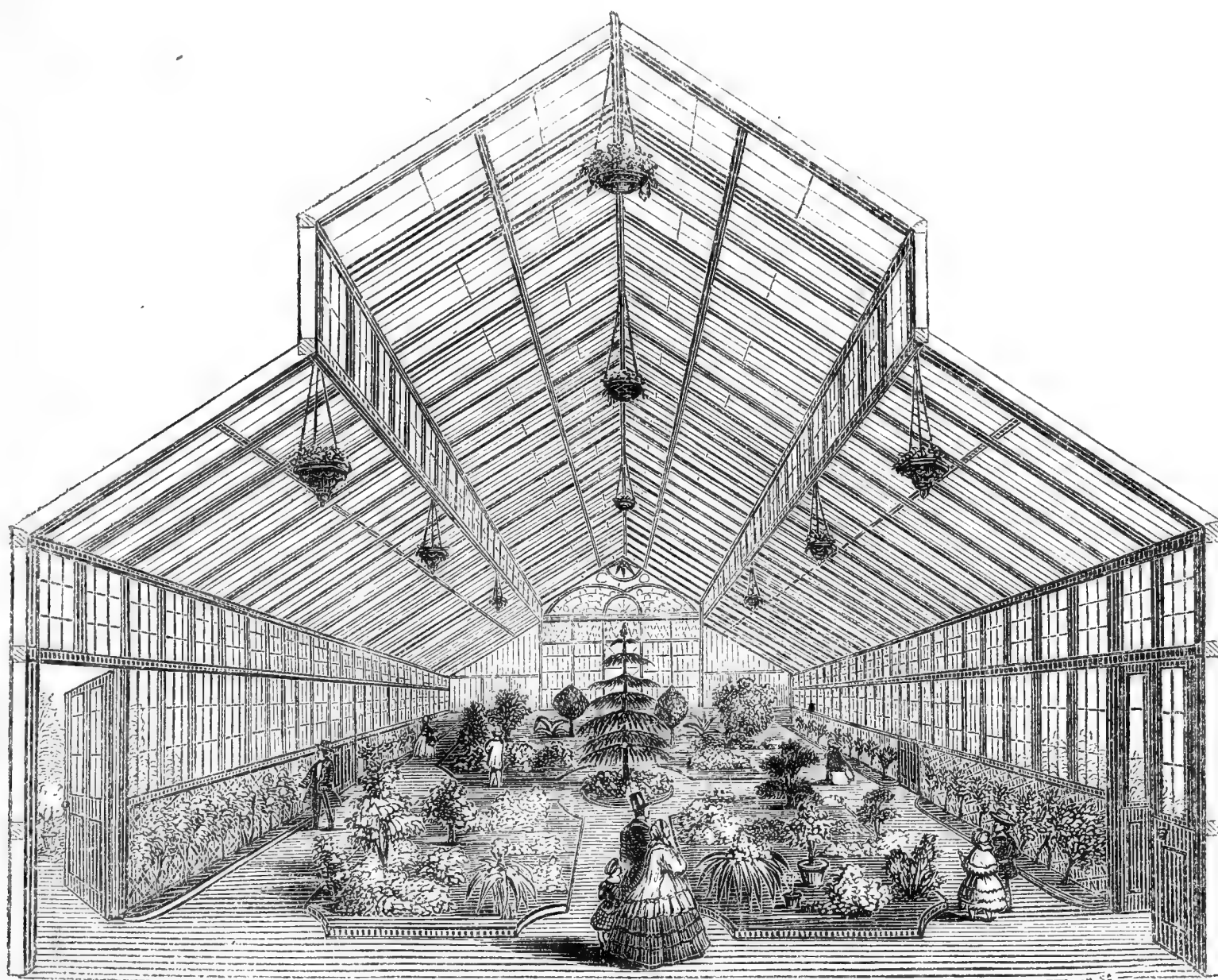
Comparing one plant house, then, with another on this principle, and well knowing how differently-constructed houses affect collections of plants—beginning with the first large house at Hackney by the Messrs. Loddiges, and going on in the order of time to the large conservatory by Mrs. Beaumont, of Breton Hall, Yorkshire; the same in the Botanic Garden in Birmingham, the Horticultural at Chiswick, the Ducal at Chatsworth, the Royal at Kew, the Loyal in the Regent's Park, and the Regal at Sydenham; and knowing the gardeners who managed all these houses, as well as the houses themselves—I say, knowing all this, and comparing one with another and with the result, I affirm, without the smallest hesitation, that the new "Winter Garden" at Chelsea is the only *Allamanda* in the catalogue—the most useful and the most beautiful of all the lot except the *Regal*.

I claimed the privilege of being first fiddle for this

house, on the grounds that I was present at the first breaking for the foundation, as I mentioned last February; that I examined the different parts of this splendid edifice in the hands of the different workmen under Mr. Weeks at his manufactory, a little higher up in the King's Road, Chelsea; that Mr. Weeks himself explained to me on the spot all the arrangements of construction, the principle and modes of ventilation, and the beauty and simplicity of the heating apparatus; and that Mr. Gruneberg gave me a full sketch of the way in which he intended to have it laid out and planted; also the sources, in different parts of the Continent and around London, whence he intended to draw the most suitable kinds of plants for it after exhausting his own resources. From the first step to this point in the story I did claim the privilege of being the first to announce its praise and its completion to the nations. Judge, therefore, of

my gratification when I read a glowing eulogium on "The Winter Garden at Chelsea" in the *Times* before I was aware that it was completed.

The *Times* passed through the conservatory and reached the beautiful and magnificent Winter Garden, which exceeds anything of the kind yet attempted in this country, and which is an elegant construction of wood and glass, seven times as large as a common-sized hothouse; or, as is shown in our last volume, page 398, as large as a common hothouse 560 feet long and 17 feet wide, and all that area has been added to the heating from one boiler, making in all 18,600 feet heated to from 40° to 45° , taking the average between the stove and greenhouse heat, and all by 7000 feet of piping, which we may average at three inches diameter, some of them being only two inches, some three, and some four and five, or more.



Three of the sides abut on the central conservatory and on its two wings, and the fourth side is exposed to the north pole. The section of it at page 398 of our last volume shows the width to be sixty-eight feet, and the length is seventy-four feet. The elevation is in two spans, one above the other. The lower span is eighteen feet high, and rests against a beam, which is supported by elegant iron columns not thicker than the wrist. Over the beam are three feet of upright glass, which moves on hinges for ventilation with a slight pull; the opposite side of the span is similar. From over the ventilating frames springs the second span, which meets in the ridge. Over the sides, which are ten feet high, and just under the lower span, is another frame thirty inches high, the length of the building, which moves horizontally on rollers as easily as a cottage window by one pull. The lower span is fixed, but the top span slides up and down by pulleys and weights, all the sashes right and left moving with one pull. Thus, with only

three pulls, the whole lengths over the side walls, so to speak, the centre of the double-spanned roof, and the ridge, open from the eighth of an inch to any extent necessary to render the inside almost as cool as the open air, all in less than one minute, or in less time than it would take to air a three-light Melon frame. The bracings for strengthening the roof are fastened out of sight on a new plan, and are as light and elegant as a feather compared with former contrivances. Three doors from the conservatory open into the Winter Garden in front, and as many from each of the side wings, with a large door in the north end centre. All round the house is a border thirty inches wide, in which a double crop of the best greenhouse plants is planted out of small pots—one crop for training against the low wall which supports the upright glass sides, and another row in the centre of the border for training into specimen plants, and as soon as any of them get too big for that place they are potted to be sold to exhibitors, or to such as

wish to imitate exhibition training. Inside this border is a walk four feet and a half wide all round, and cross-ways through the centre from south to north, and from east to west, with a circular bed in the centre for a beautiful specimen of the Norfolk Island Pine, *Araucaria excelsa*.

Inside the walks round the house run the hot-water pipes, partly below the level of the walks, and partly ten inches above them, with a wall *behind* the pipes a foot higher than the walks to keep up the sides of four conservatory-like beds of earth, one of which occupies just a quarter of the space. Over the pipes and this side wall runs a level stage all round, which will hold two or three rows of pot plants in bloom as an edging between the outside walks and the huge beds in the centre; and at each of the four corners, which corners are rounded off, rises an elegant stack of pipes five feet high. Each stack is composed of a double set of two-inch pipes for hot water, the outside circle of pipes having sixteen pipes, and fourteen in the inner circle, all fitted into a flat, hollow, iron frame at top and bottom, each top forming a beautiful pedestal for some handsome specimen in a pot: four Palms occupy them just now—two *Latania Borbonica* and two *Sabal Blackburniana*.

The sides of the beds along the cross-walks are held up by grass turf a foot wide, the surface of the large beds being level, and uniformly one foot above the walks. The last Monday in April was a bitterly cold day, and all the ventilation was open when I arrived to let off the smell of paint; but, to show me how quickly this splendid edifice could be heated, Mr. Gruneberg ordered the cock to be turned, and in twenty minutes the temperature was quite comfortable, and in less than three quarters of an hour the pipes were sufficiently hot to raise the temperature of the vast area to a Pine-stove heat; but a young, active Frenchman who was in charge of the building opened the ventilators at the end of the twenty minutes, declaring in French that the boiler could keep the house hot enough if the roof was off, and that, without plenty of fresh air while the paint smelled so badly, the plants would be—no matter where.

The way the heat is got up so quickly is this:—A four inch pipe is connected with the flow at the boiler, and is the *lowest* pipe all round the walks in the Winter Garden; there are four three-inch pipes, two and two, running *over* the first; also, the four stacks of pipes at the corners are over the whole. Now here is a move in the right direction, and directly against the grain of the old school. But after stating so many *facts* I shall go no farther to-day, and that will give “young England” an opportunity to explain his philosophy about heating with hot water; and if he gives me a better way than having the flow-pipe undermost I shall give him a whole chapter on the plants and planting of this Winter Garden; also a new discovery by which Mr. Gruneberg has propagated 1000 Grape Vines, principally of the new Muscats, from one hundred eyes, since the beginning of last January. It is his own invention, and I have seen the plants. I also would engage to raise 1,500 good plants of Grape Vines from one hundred eyes in less than six months, while the rest of our British gardeners and nurserymen are content with one good plant from each eye of a Vine.

D. BEATON.

MR. CUTBUSH'S NURSERY, BARNET.

In countries such as ours it is often difficult to decide, so far as locality is concerned, upon the requisites to success in any line of enterprise. Let a prudent, far-seeing man pitch his store in the back woods of the States, or the wilds of Canada, and ere long will be congregated around it a city of customers. The store, the mill, the church, and the school, and a good assemblage of houses and farms must exist before the nurseryman

could succeed, because for a long time he must depend chiefly on his neighbours as buyers. Similar prudential motives long kept our nurseries confined to the metropolitan and a few of the other largest cities. The aristocracy and people of rank and wealth were considered the only class who could or would go to any expense in gratifying their taste for the beautiful in plants and flowers. Not until improved modes of transit and other changes brought out in bold relief the taste for refinement and the love of the beautiful existing and panting for development among the great masses of the people, did our nurserymen begin to act as if they felt that the home British empire was just a large extended township. Hence in the vicinity of most market towns of any extent we *now* find a nurseryman, and not unfrequently two or three, pursuing similar or different departments of the same business, and agreeing by the keenness of their competition in serving their customers economically and well, even if at times, among themselves, they exemplify the truth of the old adage about “two of a trade” not fraternising too amiably. Sometimes these enterprises turn out unsuccessfully; but though entailing much loss to the speculator, which is much to be deplored, the neighbouring community almost insensibly receive an unmixed advantage, as the sight of flowers and the practicability of possessing them ever leave their traces in more refined tastes and purer aspirations. The philanthropist and the moralist may well, therefore, wish success to the nurserymen as pioneers of progress. All nurserymen so situated in country towns would wish to be liberally supported in the neighbourhood in which they live; but many, in addition to such patronage, contrive, by means of horticultural exhibitions and advertisements, to make their wares known to the whole community, thus extending their shop fronts from Land's End to Johnny Groats. It is chiefly as an exhibitionist that Mr. Cutbush has made the Barnet Nursery known to the public.

Though I had frequently passed the nursery in the days of coaches, I never was inside it until the 16th of May. On entering and looking about for a short time, before I had seen Mr. Cutbush, I was especially struck by two facts. The first was the nicety, order, cleanliness, and good culture everywhere apparent. Dutch hoes were being plied vigorously amid quarters of Holly, &c., where scarcely anything in the shape of weeds was apparent; but the sun of such a day would soon settle the almost unseen seedlings, while the moving of the surface would act as a shading to the soil below in arresting evaporation. Mr. Cutbush told me he had found that “well kept” was synonymous to “easy kept,” and that a “stitch in time saved nine.” What a contrast to having to use a scythe to prostrate giant Groundsel in full seed before customers could get a sight of Currant bushes! And yet such things are to be seen, and people grumble when with such management they can hardly make two ends meet at settling day. Such slovenliness can exercise little of a beneficial influence on a neighbourhood. So long as people choose to be gently led by example, instead of being driven by precept, an orderly, well-kept nursery is to the neighbourhood in which it is placed an ever-present incentive to industry and neatness, and a standing rebuke to sloth, carelessness, and weeds. Only think of the futility of a worthy clergyman descanting on Sunday on the importance of cleanliness as somewhat akin to godliness, whilst the listeners cannot hear him without having their Sabbath-day garments soiled with the filth and dust collected in the pews, or their attention distracted by the activity of the spiders in snaring their prey in their many webs, fixed in corners of the ceiling and windows. Need we be surprised that the cottage in its general aspects so much resembles the church or the chapel in its vicinity?

The second fact was the finding in a country nursery so great a number of fine-grown specimens of various sizes of all the more valuable hard-wooded plants, as Azaleas, Ericas, Boronias, Apelexes, Pimeleas, Eriostemons, Polygalas, &c., and also many of the most prized variegated and fine-leaved plants. Beautiful small specimens of Heaths, &c., were just being potted, and the whole stock, from the largest specimens to tiny things in thumb and 60-sized pots, were in healthy luxuriance. There were comparatively few bedding plants, which many country nurserymen find so remunerative, on the principle of quick returns and small profits, though beds of the principal bedding plants were to be seen. The chief space under glass, however, is given to plants of a more permanent character, and Mr. Cutbush seems satisfied with the path he has chalked out for himself; and there can be no doubt that, if it be sufficiently remunerative, there is a great amount of pleasure in looking day after day on the opening beauties of such fine specimens.

As merely a few examples of these I may mention a neat little plant of the *Genetyllis Hookeriana*, with its reddish, claret-like flowers hanging at the points of the shoots; fine plants of various Pimeleas, including *spectabilis* and *spectabilis rosea*; a fine plant of *Rhynchospermum jasminoides* just coming into bloom; many fine Azaleas; a *Statice Holdfordii* about four feet across, and having about thirty trusses of its pretty blue flowers; many fine symmetrical Polygalas of different varieties in bloom, and coming on; beautiful pyramidal plants of the various Eriostemons, including a dense, broad, pyramidal bush of *Eriostemon buxifolium*, some four feet in height and four feet in diameter; a *Boronia tetrandra*, loaded with well-coloured flowers, and fully four feet in height and four feet in diameter, and several beautiful Apelexes, well bloomed, and averaging three feet and a half in height by three feet and a half in diameter. Among smaller well-grown plants I noticed the *Oxylobium Osbornii*, well worth growing, and a *Pleroma elegans* just swelling its flower-buds. Mr. Cutbush said the best way to manage this rather fickle plant was to grow it pretty freely in summer when finished flowering, harden the wood well in autumn, starve it considerably by a low temperature and comparative dryness in winter, and when starting it in spring give it a fillip with increased temperature and moisture at the roots and in the atmosphere, and almost every side-shoot then made would come with its flower-buds near the point.

Among *Ericas* I noticed a large plant of *fastigiata lutescens*; the almost continuous bloomer, *mutabilis*; the sweet-scented *suaveolens*, *pallida*, and *odorata*; *Beaumontia*; a beautiful plant of *MacNabiana*; and a gem of *Hartnelli*, some three feet and a half in height and three feet and a half in diameter, the blooms well coloured, and the branches and blooms just thick enough to permit light to play a little between them, so as to secure more elegance and health combined than if they had been more thickly studded.

Among variegated plants were good specimens of *Caladium bicolor splendens*, *rubicaule*, the rare *picturatum*, and the large, white, blotched-leaved *pictum*; also the large, very singular-leaved *Begonias*, *Thwaitesii*, *Reichenheimi*, and *marmorata*; a large bush of the purple-shaded *Maranta zebrina*, which requires shade to bring out its beauties; a sweet plant of *Maranta regalis*; *Dracæna terminalis* and *ferrea*; *Ananassa sativa*, *variegata*, and *Penangensis*; and *Aspidistra lurida*. I do not recollect seeing any *Crotons*, but there was a charming bush of the variegated *Hydrangea*, and almost demonstrating the fact that though it will grow well enough in a greenhouse, yet to have it in fine order, with the leaves nearly of a shining white, it does not dislike the closer atmosphere of a plant stove. In the end of one of these

stove houses was a small wooden box covered with a sash, and in that box were growing most of the beautiful *Anæctochilus*, and the almost as beautiful and rather more hardy *Physurus*, all showing by their healthy appearance that they relished the treatment they were receiving. Mr. Beaton lately presented us with some valuable memoranda as to the propagation and treatment of these wonderful-leaved plants. Had I the chance of trying, I should be tempted to use a glass case like Mr. Cutbush, instead of covering each plant with a large bellglass. One of the most striking green-foliaged plants was a *Philodendron*, I forget its specific name, but somewhat resembling an *Arum* or a gigantic *Caladium*, the young leaves of which when unfolding are not only most interesting, but the large, full-sized leaves are equally so, from having a great many perfect oval holes or openings of various sizes, furnishing no bad idea for a flower garden of ovals.

Though neatness and convenience have been closely studied, yet economy in the construction of the houses, &c., is also everywhere apparent. Let us look, for instance, at the largest house, where most of the finest specimens are now placed. This house is span-roofed, forty feet long, twenty-three feet wide, fifteen feet in height from the floor to the ridge board; side walls four feet in height; ends above that height, all glass; a three-foot-wide shelf nearly all round the house, but no stage in the centre, as this was not deemed necessary, and all suitably heated with hot-water pipes. And what do our readers imagine this huge barn of a house cost? Just *fifty pounds*. To be sure there is no great elegance of workmanship displayed, but then all seems durable, clean, neat, and fit and suitable for the purposes contemplated. The whole woodwork is larch, with the exception of four oak posts at the corners. Larch posts support the wall-plates. Sawn larch boards form the sides of the house. Fifteen-inch boards from the wall-plate downwards are fixed on hinges as ventilators. Below them to the ground the boards are covered with asphalt felt to keep them dry and the house warm. A ventilator fifteen inches in width goes along one side of the ridge board, opened and shut by a rod and windlass. A thin board forms the ridge board. Against that, and opposite each other, the sash-bar rafters are fixed at the apex, and of course the other end is fixed to the wall-plate. These sash-bar rafters are placed so as to receive glass fourteen inches wide; each rafter is four inches deep and an inch and a half wide. The whole of the woodwork was merely sawn, not planed, and when well dried and seasoned was painted with stone-coloured, anti-corrosive paint. Three larch poles in the centre gave a stay to the roof. A small saddle-backed boiler and a sufficiency of piping, as well as the slate shelves, were all included in the £50.

I will mention another very useful little house, as, under various modifications as to size, &c., it would be very useful to many of our amateur friends. This house is more finished in the usual way, the rafter sash-bars being much smaller, planed, and painted. The house is span-roofed, forty-seven feet long, twelve feet wide, height to ridge about seven feet, height of brick side walls five feet, ventilators in the side walls, and glass ventilators at the ridge, the rest of the roof fixed, doorway in the centre of one end, walk down the middle, sparred wooden platform on each side, a few iron rods on side of pathway to support the roof. The whole cost, including heating by hot water, £60. In the main outlines this house somewhat resembles a house at Hitchin Gasworks Nursery, only the latter is heated by a flue in the centre, and has earth platforms at the sides for the plants. The present house would cost more; but then, for an amateur, the space on each side of the pathway beneath the platform would be exceedingly useful for storing away the hardier bedding plants and many other things in winter.

I have included the cost of heating these houses, but several boilers are now exchanged for one of Thomson's triple retorts, which answers very well, and is a great saving of fuel, though from circumstances the boiler did not seem set to the best advantage. One of these circumstances was the impossibility of getting down on account of water, a fact which I could scarcely have believed unless I had seen it. The water in the stock-hole was standing almost up to the fire-bars of the furnace, and during winter and spring water may be procured anywhere in the nursery at little more than two feet from the surface. At that depth water was found standing in pools in the nursery, and also on the common, close to the scene that witnessed the thick of the fight at the battle of Barnet. The soil seems a sandy loam on a bed of gravel. The surprising thing is that this ground is amongst the highest cultivated soil in England, and whilst the water is so near the surface at this eminence, in the valley in the vicinity, some hundreds of feet lower, the well-diggers must descend several hundred feet more, through a clay substratum, before they can get water. Nay, in the town itself, on one side of Union Street, water can be procured close to the surface, while on the other side it can scarcely be got at any depth. In the one case it is likely that the rain that falls during the season cannot get away, owing to a pan of unctuous clay at a short distance beneath; in the other a descent must be made until gravel or sand is reached. Perhaps some geological friend will solve the seeming mystery. Mr. Cutbush's well is only about nine feet deep, and has never been dried. He proposes in the case of his furnace, as soon as the water sinks a little in the middle of summer, to sink his furnace, and lay the bottom and build the sides strongly and securely in cement to prevent the water rising, as the raising of the boiler would necessitate the raising and altering the whole piping for hot water in the establishment.

One word more as to heating. Most of the pipes in the newest houses, *after passing a short distance from the furnace*, are joined together with Portland cement, and they have never cracked nor leaked. The pipes are first placed, then kept in their proper position at the joints by means of some little wooden pegs, so as to have an equal space all round. A little tow or stout brown paper is used to abut against the shoulder, and the cement, somewhat thick, is rammed in. This is a very expeditious mode of fixing, and when necessary the pipes are easily taken apart again.

With such a soil and such moisture beneath, it would be desirable to see how many of the bulbs we import might succeed. Most things seemed to be at home in it. I noticed some fine Yew hedges more than 150 years old. There were fine quarters of Sweet Bay that seemed capable of being moved and removed any day; large groups of hybrid Rhododendrons in the natural soil, that moved with such large balls as never to feel the lifting; and, not to enlarge by going into detail, I would merely chronicle that the pre-eminent out-door feature of this nursery is Holly, which seems to be perfectly at home. The plants are grown just with room to develop their beauties in heights from twelve feet to twelve inches, and embracing every possible variety of smooth and curled, spotted and variegated. Of the latter kinds some thousands, I was informed, were grafted every year. I was given to understand that the trade were large purchasers. There can be no doubt as to the trees moving, for at the farthest each plant is replanted every two years. September and May are the times chosen for the operation. When, as in the present case, May becomes a dry and warm month, then the operation is delayed until September, so as to avoid the necessity of watering. The latter month would, therefore, seem to be the most suitable for purchasers if it suits Mr. Cutbush so well. These Hollies are worthy a journey to

see, and are in themselves a little sunk fortune at the price at which good specimens are generally sold. I have not attempted to mention many fine specimen greenhouse plants now coming on, as most likely they will be heard of during the season. For one thing, in these days of overcrowding, so as to meet the requirements of the fashionable bedding system, I would wish the employers of gardeners to visit this nursery, where they would see that fine specimen plants can only be obtained by giving them ample room, and that full beds and fine specimens should be provided for by separate and distinct accommodation. R. FISH.

THE CHISWICK FLOWER SHOW.—JUNE 3.

THE "glories of Chiswick" have been as completely turned upside down as the trenching of a flower-bed for Tulips. Excessive legislation to prevent fools from cutting off their own heads, to keep the cuckoo and all the sparrows from seeing the flowers, to prevent people from smiling and from shaking hands for fear of conspiracies, and to make all the gifts and "glories" of nature more in one prescribed circle, like a florist's Pansy, has been buried; that is, this kind of legislation has been buried in the bottom of the trenches at the off-side of the "American ground." And thus ended the first Horticultural Society in the world. There was nothing in the world of flowers, however, which was more perfectly in gear than the *arrangements* of the old Chiswick Shows; the "Park," the "Palace," and the new Chiswick lack some of the springs which made those arrangements so elastic that dire adversity itself could not snap even the most minute turn in the mechanism. Your humble servant was the last guard on the old coach, and the oldest of them on the staff; and, in submitting to the "powers that be," it is but plain justice to say thus publicly, that as far as I was personally concerned and connected in the old Society I do not recollect having ever had to complain of the Society or any one of its officers, from the highest to the lowest. The change in the appearance of the garden, on the shortest notice shows the difference between a tea-garden in the neighbourhood of London and "the gardens" at an old English residence in the country, as much as the other changes showed the difference between a Society attempting to do things which could have been better and cheaper done by private enterprise, and another Society which aimed only at stimulating the exertions of the gardening world. O ye "Northern Athenians" of "Auld Reekie!" ye people of "Enbro," the admirers of Christopher North and the Etrick Shepherd! how do you now estimate your new tea-garden after rejecting the proof-spirit of the age in the plans of the "wee bit laddie?" as my Lady Ruthven called him the other day, when telling us, with the pride of a Scottish matron, of "those who hae wi' Wallace bled;" that Mr. McEwen was brought into the gardening world at Ruthven, opposite "the hill of Moncrief," where the finest landscape views in Her Majesty's dominions may be seen; from whence, also, the proud Roman first experienced the awful realities of the Grampian range—the second Alps, the barrier to his northern sway. Landscapes such as these could not fail to make a lasting impression on an ardent "spirit of the age," "the wee bit laddie," the head gardener of, now, the first Horticultural Society in the world; and that he has already turned the "glories of Chiswick" to such account is easily to be derived from the hill of Moncrief.

The garden, besides the new improvements, was *furnished*. For the first time all manner and styles of artificial accessories which are met with from our ducal to our tavern gardens were well represented, and as well

disposed of by the artificers in every available space all over the garden, even from the planting of the most chaste and classical vases to the "setting" of flower-pots in fragile and fairy-like wirework "stands." The "effect" of the planting of the "furniture," however, was the most ludicrously comical of all the garden landscapes I ever dreamed of; and, with the exception of love dreams, there are no dreams so delightful as fine landscape dreams.

When a flower-bed or a flower-basket is made or put on a lawn it may be done anyhow, without much violence to taste or the law of perspective; but to place two beds, or two baskets, or two anythings on a lawn, requires a little judgment. How much judgment, therefore, would be necessary to place two hundred things on a lawn no one knows, because judgment has never been stretched so far as that. To save the judgment they made certain laws, and the different clauses of the acts explain the different ways of placing everything in every *kind* of garden, and there are lawyers and magistrates to put these laws in force and motion; there are courts of appeal, also, just as in civil law. From the ludicrousness of the planting referred to I could very well conceive how a Lord Chancellor would be tickled if the Judges at Chiswick were to sketch out, landscape fashion, how they would codify the statute law; but no one could appreciate the effects of the planting I mean from description, if it could be described; the eye must have seen it; nothing else could give a true picture of it to the mind.

Every one showed off his vase or vases, stands or baskets, by planting in them such flowers as he could find, without once thinking how his planting would correspond with the planting of the one before him, or those behind and on either side of him, and the effect was simply indescribable, but certainly, in a good many instances, the most comical in the extreme. I never was so much amused, and yet every one instance was done tastefully and thoroughly well. Until that day I never could understand the real meaning of "unity of expression," but I could then see it meant the opposite of unity of inexpressibility; but on a show day there are so many things to attend to that the "gentlefolks" cannot attend to business. The business part of the Show will not begin in earnest till all the plants are removed. The new dress and furniture, down to the forks and spoons, will be left on view a certain length of time, and those who really want to buy will go down or up to Chiswick "by themselves;" and I promise such of them as have not already seen the sight that it is indeed well worth seeing, and that good bargains can be made on the spot, from a nice and elegant conservatory to step out into from the drawing-room to the trowel for transplanting spring flowers from beds to borders, and borders to beds. Not only that, but hundreds of things which one never thought of before, but without which no garden can ever be complete.

Those who are fortunate enough to be able to get into the country from large towns, and to have large gardens of their own, have so many things to learn all at once, that, without such opportunities as are now offered, they could never expect to be "up" to so much in gardening for many years to come; but go to the shows, see all the contrivances of the craft, and read the current literature of the "profession," and it is wonderful how soon *nature is reversed*. Nature is green at Chiswick; and the natural man is green, and jolly green he is in London; but turn him out to the country air, and how soon he becomes, from his natural *greenness*, a healthy "stout brown," and as knowing as a native. Why, I see it every season. Our very last batch to Surbiton are casting their town teeth at this moment, and looking at this page for "victuals and drink." We will therefore begin with

THE GREAT CONSERVATORY, where the Orchids, the variegated and fine-leaved plants, the Ferns, the new plants, and the gems of *Anæctochilids* were arranged most tastefully all round the sides on three stages, rising one above the other, and covered with green baize; and at the furthest end, amphitheatre fashion, the entrance was by the east-end door; the centre was gravelled and partitioned off, for go and return, with an iron rail; the sides of the gravel were verged with green turf; in front of the stages and in the middle of the building stood a large handsome vase, and in it was placed the finest specimen of horticultural skill at the Show, a huge *Gesnera Cooperi* from Mr. Veitch, with no less than forty-four flowering shoots drooping elegantly and evenly all round, and a ring of variegated and fine-leaved plants were set on the gravel all round the majestic vase. Here, in the middle passage, was a break in the plant stages, to accommodate, on the right and left, a beautiful set of drawing-room elegancies and conveniences for plants, nosegays, miniature fountains at play, and a variety of styles of aquariums, which were alive with fishes and water tinyworts in great and most curious variety. From the curvilinear roof hung three rows of hanging baskets filled with gracefully-suspended plants; and beyond the great vase in the centre stood the most gracefully drooping of all the *Acacias*, which is called *Riceana*, after Lord Mounteagle. This and a tall, naked, *Puya*-looking plant near it are all that remain of the "glories" of this house.

On entering the first most striking object was a splendid group of Mr. Glendinning's *Farfugium grande*, a hardy relative of the Japan Coltsfoot, if the Japanese have a Coltsfoot, which I first described last autumn from Regent Street. In addition to its fellows at the Crystal Palace were *Lemonia trifoliata*, and others of equal rarity; and Mr. Veitch stood beside him with the following additions to his novelties at Sydenham, namely, *Ceanothus Lobbianus*, a stiff, upright bush, with racemes of the usual blue flowers of the genus, a very distinct kind; *Thujiopsis dolabrata*; a new stiff *Thibaudia*, with shining rose-coloured flowers; and a kind of *Cyclobothra* with yellow flowers, very much in the way of *C. barbata*. These are rare little bulbs, natives of Mexico and California. *Theophrasta macrophylla*, and another like it, but serrated on the edges of the leaf: both are, like the rest of the family, splendid-leaved plants. Also, a fine rose-coloured hybrid Rhododendron and some others. From the Wellington Road Nursery the Messrs. Henderson sent the *Variegated Dahlia*, which will be as useful as the *Flower of the Day*; a very beautiful *Gesnera Miellesi*, which has a crimson ring in the throat and pure white below; *Maranta regalis*, finely marked; *Phyllocladus Cunninghamii*, the newest name and the most curious plant of all the Conifers; *Aralia elliptica*; and *Stadmannia Jonghii*, a fine Ropala-looking plant.

ORCHIDS.—Mr. Veitch took the first prize for them. He had a noble set of plants, the newest of which was another new *Lælia*, differing from the new one; *Bryslana*, from Mr. Jackson, at the Crystal Palace, but of that breed represented by *Lælia purpurata*; *Cattleya Mossiæ*, nearly five feet across; *Lælia purpurata*, with seven flowers; *Aërides Veitchii*, with five branched spikes; a fine *Cattleya Skinneri*, *Cypripedium barbatum*, and the usual quantities of *Phalænopses*, *Vandas*, *Aërides*, and *Saccolabiums*.

The Messrs. Jackson took the second prize with another fine lot, beautifully flowered, such as *Cattleya Mossiæ*, and *Mossiæ aurantia*, having a dash of yellow across the centre of the lip; *Burlingtonia fragrans*, *Dendrobium Devonianum*, a huge plant of *Calanthe veratrifolia*, *Aërides Fieldingii*, *Trichopilia tortilis*, *Oncidium leucochilum*, *Epidendrum primuloides*, with *Vandas*, *Aërides*, *Saccolabiums*, &c.

The first prize in the amateur class was won hand-

somely by Mr. Pitcher, gardener to Mr. Rucke, whom everybody was glad to see in the lists again. This group consisted also of fifteen plants, and *Lælia purpurata* was, perhaps, the finest plant that ever was exhibited: it had three noble flower-spikes, and five most noble flowers on each spike; a new *Saccolabium* to the shows, a slender kind with upright flower-spikes, and the flowers of a most peculiar tint of dark red orange; a splendid plant of the Cow's Horn Orchid of Honduras, the *Schomburgkia tibicinis*, with others, all of the best classes.

Mr. Gedney came in next with a huge mass of the Rhubarb-smelling *Dendrobium macrophyllum*, *Aërides* of sorts, *Saccolabiums* of sorts, *Vandas*, *Phaius*, *Calanthes*, and *Phalænopses*. He was followed in the prize-list by Mr. Williams, author of one of the best books on the race. *Aërides Warneri*, so called after his spirited employer, was indeed a great beauty, with two long spikes of rosy-lipped, large, elegantly-set blooms; the most useful *Oncidium ampliatum*; a splendid *Dendrobium nobile*; a *Sobralia*; and others in the same style.

The well-known names of Messrs. Carson, Keeley, Woolley, Green, and Grix followed in this order of preference, to their great credit, and to our delight and satisfaction. Mr. Woolley had a noble plant of *Dendrobium Paxtoni*, and the lady-like *D. transparens*. Mr. Keeley had the only *Anguloa* there, *A. Clowesii*, with five noble citron-yellow blossoms; *Cælogyne Lowii*, well done at last; and *Dendrobium clavatum*, the finest, or at least the largest, flower of the yellow *Dendrobes*. Mr. Green had the only *Oncidium Lanceanum*. Mr. Carson had the only *Acanthophippium*, a pillar *Vanda teres*, *Dendrobium Farmerii*, so called after his employer; and Mr. Grix had a fine *Aërides crispum* and *odoratum*, and *Cymbidium aloifolium*, the only one of it there. Mr. Woolley competed again in collections of six plants with Messrs. Ivison, Baxter, Dods, and others; but their luck was not decided when I passed. Indeed, after the third prize the degrees of merit are set down after my own judging, begging the Judges' pardon, for I could not await a law decision, and if I decided wrong they have only to place it against the old score, and I shall pay twenty shillings in the pound when the bread and butter are cheaper. Mr. Barker, of the Paradise Nursery, Hornsey Road, competed with the well-known and old-established firms of Messrs. Veitch and Jackson, and paid most handsomely for his whistle; but how much I did not learn. He had the only *Dendrobium formosum*, a large white; and Mr. Backhouse, of York, had the little, lovely, rose-coloured new *Chysis Limminghi*—what the Doctor said would last in the hair, at balls and galloping, for a whole week.

After the Orchids commenced the VARIEGATED and FINE-LEAVED PLANTS. Mr. Veitch cannot be approached in these plants unless Mr. Parker will kick over the traces, as he threatened to do, both here and at the Crystal Palace, coming upon us very much like and before the new comet. The variorums from the Exotic were such as these:—*Aspidistra lurida*, *Coleus*, *Dumb Canes*, *Ananassas*, *Caladiums*, *Marantas*, *Pandanus*, *Cissus*, *Crotons*, *Yucca quadricolor*, and the old, but too long neglected *Sansevieria Zeylanica*, which nobody seems to know the name of in these days. It is a dart-upright, succulent cluster of leaves from a common root, and the leaves are variously barred and streaked with green and black, like an awful-looking snake or serpent; but they manage it too well now-a-days, which makes the bars and shades run "promiscuously." It would live five or six months without water, and then frighten a Sambo into fits as a veritable snake. Mr. Parker calls it *Bromelia sceptum*; yet it is a well-known medicinal Lilywort with the students in Edinburgh, and is next of kin to the New Zealand Flax, *Phormium tenax*.

Next to these, and in the very place of honour in the

centre of the amphitheatre, stood the collection of fine-leaved plants from Mr. Veitch, a complete and shady grove of Palms and other stove plants in the most luxuriant health. Mr. Parker, with the spirit of a lion-killer, faced these here and at the Crystal Palace with true English pluck. His plant of the Fern *Gleichenia flabellata* is the finest in the country; his *Bromelia sceptum* is finer than Mr. Veitch's *Sansevieria sp.*; his Dragon trees are fierce, fairy-like, and most beautiful to look upon; and his *Puya Bonplandia* is really a beautiful Pine-Apple-looking plant, but it is a true *Pourretia*. As we must expect a dash of true botany from such of the nurserymen as compete under the new brooms of the Horticultural, we must not pass them through the mill in false generics if we can help it, as we should a green city man or a woodland gardener. *Agave univittata*, in a miscellaneous collection by Mr. Parker, is really a good dwarf, close, short-leaved Aloe, with dark green narrow leaves, having one band or ribbon of light green up the middle of the inside of the leaf. Such plants as this and Mr. Veitch's *Yucca quadricolor* never die as it were, and are both most curious and most valuable for setting off the small gardens of rich citizens in the suburbs of large towns; they are never out of place, from the top of the staircase to the farthest-off end of the garden.

D. BEATON.

(To be continued.)

A FEW OF OUR NATIVE SPRING-FLOWERING PLANTS.

AGAIN has Mr. Beaton our thanks for calling attention to the early beauties of our garden. We must not forget the *Leucojum vernum*, which has afforded us beauty and fragrance throughout February, and succeeded as it is by *L. pulchellum*, just passing away for *L. æstivum*; and again now in beauty is *Anemone narcissiflora*, with its clusters of white flowers, in contrast to the *Anemone palmata*, whose golden and broad, expanded blossoms are elevated a foot high, and based by its handsome foliage. *Czackia liliastrium*, too, the St. Bruno's Lily, graces the garden with its masses of miniature white Lilies. *Trillium grandiflorum* and *Trillium sessile* are yet in great beauty, as are also the *Dodecatheon Meadia* in all the varieties of white and colours.

Mr. Beaton desires to possess *Anemone ranunculoides*. It shall be his upon a convenient occasion, and any of those named in the following list. It is indeed delightful to think that some one induces a search for these beauties amidst the every-day lamentations of our friends that their gardens afford no flowers till the middle of July.—A CONSTANT READER.

Tulipa sylvestris. In the woods of Ham Hill, Somerset.

Anemone Apennina. Woods of Straston, Wilts.

Paris quadrifolia. At Langrish or Petersfield, Hants.

Anemone ranunculoides. Woods near Ferrybridge, Yorks.

Gentiana pneumonanthe, *Drosera rotundifolia*, *Drosera longifolia*. New Forest, Hants.

Colchicum autumnale and white var. Woods of Orchardleigh Park, Somerset.

Lathræa squamosa. Rose Hill Park, near Winchester.

Ophrys apifera. North Rise, Isle of Wight.

Cypripedium calceolus. Meadows of Castle Howard, Yorkshire.

Dianthus cæsius. Cheddar Rocks, near Bristol.

Anemone pulsatilla. Back of Southdown Hills.

Atropa belladonna. Woods of Netley Abbey, Hants.

Eryngium maritimum. Freely upon the shores of Hants.

"A CONSTANT READER" has gathered the above in their several localities.

[Except *vernum* all the *Leucojums* are very little known, and *Galanthus plicatus* goes for *vernum* nine times out of ten. *Anemone narcissiflora* was never in general cultivation, nor the true *palmata* but very sparingly. There is a white-flowering kind in July which usurps the true name. *Anthericum liliastrium*, same as *Czackia*, used to be very common in the

north, and is the easiest to cultivate. *Trilliums*, or at any rate *T. grandiflorum*, require shade, shelter, and very sandy soil on a damp bottom. The one mentioned from Kingston, the best we ever heard of, flourishes under these conditions. Those marked in your list would be most acceptable to Mr. Beaton, and you will see in another page that Sir Joseph Paxton is on the same scent. Who has a good patch of *Anemone amplexicaulis* to throw across the scent?]

TO CORRESPONDENTS.

RHUBARB WINE (Bradford).—You must buy our numbers 97 and 99. They contain the best directions for making it ever published. Do not meddle with your Lilies of the Valley. They will bloom next year probably. If not growing strongly give them a little leaf mould about their roots.

ROSE INSECTS (J. C. M.).—Your insects which attack the Roses at night are the destructive Weevils, *Otiorynchus sulcatus*. (See COTTAGE GARDENER, iii. 125, for figure and description.)

HIBISCUS SURATENSIS (W. W.).—This *Hibiscus* is an East Indian annual, which is very pretty, but so impatient of cultivation that it was lost soon after its first introduction. We never met with it in a trade list. Perhaps some correspondent may tell you where it may be obtained.

SAXIFRAGA GRANULATA AND VERBENA ENDYMION (H. B.).—Mr. Beaton will be much obliged by them. His direction is "Surbiton, Kingston-on-Thames, S.W."

INTERMEDIATE STOCK (T. Mann).—There is nothing remarkable in the change of your Stock from scarlet one year to green the next; but, as your soil may be the cause, it is as well to know that chalk will correct the tendency. Give a good dressing of chalk to the border on which the Stocks vary, and we think they will not vary again. Has any one seen these Stocks "run" on the chalk formation?

SEEDLING CALCEOLARIAS (W. B. Jefferies).—They are very good flowers and very pretty, but no one can give an opinion worth relying upon unless he sees the whole plant.

YOUNG BULLFINCHES.—B. C. P. will be much obliged by information how these are to be reared.

NERIUM OLEANDER (A Lady).—It is absolutely necessary to keep the pot in a saucer (not a tub) filled daily with water. Buy our number 25, and there, for threepence, you will have a dissertation by Mr. Beaton on Oleander culture.

IMPROVED COIL BOILER.—Another *Experimentalist* wishes to know where this boiler, mentioned by "AN EXPERIMENTALIST" at page 121, can be obtained.

INSECT ON APPLE AND CHERRY TREES (T. T.).—The insects which have injured your Apple, Pear, and Cherry blooms are the destructive Raspberry Beetle, *Byturus tomentosus*. The only plan to destroy them is to beat the boughs over a sheet, and then collect and kill the Beetles which will fall. The young grubs which will by-and-by be found in the fruit of the Raspberry should also be carefully destroyed. We do not know an Apple called *Lord Suffield*.

PEACH TREES SHEDDING THEIR BLOOM (A. D.).—If the wood is thoroughly matured in autumn, and the trees get fair play afterwards, there is little danger of the blossom dropping. If the trees are subjected to great heat, either from being covered with glass or otherwise, and the roots are cold, wet, and dormant, it is very likely the blossom would drop from want of nourishment. We knew a Peach house, most of the roots of the trees in which were outside the wall, that so dropped their blossom for years. It was forced gently, but there was no spout to carry away the water that fell from the roof. A spout was put up, the border slightly covered with litter, and thus neither allowed to be greatly cooled nor deluged, and there has been no failure since. If such extra wet and cold while the branches were excited are not the cause in your case, we should attribute it to the greenness of the wood in the autumn.

VARIOUS.—A *Subscriber from the Beginning* will find the books that will suit him mentioned a week or two ago. We hardly know what eight or ten decorative plants would be best for a Flower Show in August, that are to be purchased now, and nothing but a cool greenhouse to grow them in. We know that many purchase plants, and show them as their own growth a few weeks or days after, and this we will say no more about than that it is a contest not of skill, but outlay. We will think the matter over, and meanwhile some of our exhibiting friends knowing in these matters may help us.

MUSHROOMS THICK AND FAT.—L. J. will be attended to, but the matter may wait a week or two, for the dog days are the most trying periods for Mushroom houses.

VARIOUS.—*Clericus* will also be attended to; meanwhile let us say there is no difficulty in forcing Peaches in pots. Allowing the trees to grow through the pots into the border is just good or bad according to the result we aim at. When such, however, is the case, the tree in the pot becomes to a great extent a planted-out tree.

NAME OF BULB (F.).—We cannot be quite certain what this little bulb can be, but very probably it is the *Galanthus plicatus*, which is a native of the Crimea. We should not disturb it on any account. It will flower next year if never touched from now until then. If doubt then exists about its name send us a fair specimen, and we will tell you what it is. Then do not disturb it again during the whole year. The bunch will then be doubly as fine as it was the year before, and so on. Let it continue for some four or five years without its being disturbed with either hoe, spade, or fork.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JUNE 26th. EXETER. Sec., T. W. Gray, Esq., Queen Street, Exeter.
JULY 8th, 9th, and 10th, 1857. LEAMINGTON. Sec., Thomas Grove.
JULY 9th. PRESCOT. Sec., J. F. Ollard.

JULY 28th, 29th, and 30th. SHEFFIELD, SOUTH YORKSHIRE, AND NORTH DERBYSHIRE. Sec., William Henry Dawson, Fig Tree Lane, Sheffield.

AUGUST 8th, 10th, 11th, and 12th. CRYSTAL PALACE. Sec., W. Houghton.

AUGUST 19. BRIDLINGTON. Sec., Mr. Thomas Cape.

SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.

SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Sec., Mr. H. Churchill, King's Head Hotel.

OCTOBER 1st and 2nd. WORCESTER.

NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.

DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.

DECEMBER 30th and 31st. BURNLEY AND EAST LANCASHIRE. Entries close December 1st. Secs., Angus Sutherland and Ralph Landless.

JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.

JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.

N.B.—Secretaries will oblige us by sending early copies of their lists

ONE JUDGE OR SEVERAL?

It will be almost universally acknowledged that the present time is indeed one of vital interest to Poultry Exhibitions. Each succeeding year outvies its predecessors as to the intrinsic value of our appointed premiums, and necessarily birds that can be depended on as "winners" progress in value accordingly. At the period the writer of this contribution first officiated as an arbitrator a first prize of one sovereign value was considered liberal, and a premium well worth the winning. Six years only have passed away, and we now find twenty times the amount offered as a similar reward, and that, too, with the very satisfactory and honourable provision that "money or plate" are equally available at the option of the winner. Such regulations bear about them the very impress of sterling integrity on the part of the Committee, but certainly necessitate especial attention to the plans adopted for the final allotment of such really valuable distinctions. At the hands of the Judges their future ownership entirely depends; therefore efficiency and rectitude are alike indispensable characteristics of those to whom so responsible and onerous a duty is consigned.

It is pretty generally known that the competition of late bears not the slightest comparison to that of former years. Fowls that at the onset of the poultry movement were considered unexceptionable are very far behind in the race as to even the generality of specimens that are now exhibited, and could they by possibility be placed beside the successful of the present time, how few persons would accredit that such poultry had ever themselves held the proud position that rendered them so covetable in their day, and at that time distinguished their fortunate owners in the poultry world. This has arisen from two causes. Firstly, the essential traits of character in each variety are now almost universally understood; and, in the second place, for some years past the most scrupulous care and anxiety to improve and perpetuate such developments have arrested the attention of careful breeders. As an example look to our general Spanish classes. The change wrought in this description of poultry stock—although the improvement even here in no way surpasses that of many other varieties—is most extraordinary. The usual difficulty in time present is really to find one indifferent pen; formerly an adult cock possessing even an approach to a perfect face was gazed at with astonishment by hosts of admirers, and enthusiastically pronounced "unapproachable."

The same "strain" that time back was possessed only by a single individual is frequently found, by purchase and so forth, now competing from the well-regulated yards of, perchance, some scores of amateurs, each equally enthusiastic, and resolved by every means at his disposal to outvie his opponents, whether by more careful selection of the com-

peting birds, better development of general character, close approximation of plumage, or that equally important feature, "condition." When it is borne in mind that numbers of such specimens sprang from the same originals it must be very obvious how closely assimilating, when alike well treated, such birds are presented before the arbitrators, and how slight, in many instances, the superiority of the successful will now be to what was evidenced formerly. The discrimination of Poultry Judges is, consequently, taxed much more heavily than heretofore, whilst the immensely increased value of the prizes forms still another and certainly not less weighty reason why the final conclusions of the arbitrators should be justifiable, and obviously the result of unflinching rectitude of purpose.

My past experience convinces me this much-to-be-hoped-for end is far more readily attained at the hands of a few officials than of many, and with greater certitude likewise, besides one other most desirable feature, vastly increased expedition; for I am fully assured any gentleman well versed in all matters appertaining to his office will complete his duties in far less time, and quite as satisfactorily, alone, as when several parties are conjointly awaiting unanimous decisions.

Again, the "difference of expense" entailed upon Committees where four or five Judges are engaged is too glaring to need more than the mentioning. Of course it is freely admitted that where few only are employed to fulfil the duties of this thankless office their ability must be unquestionable; still, in cases where the managers of Poultry Shows have confidently determined "in the multitude of counsellors is safety," frequently has after experience proved to satisfactory demonstration that a portion of those officiating were mere drag chains on the progress of their more able colleagues. In case of ill-judged decisions, where arrived at by numerous arbitrators, "the public" can but very rarely indeed arrive at anything like "the fact" of *who* were the wrong doers; so much so, that one incident occurred within my knowledge where a disputed premium became the subject of a really close inquiry from the unsuccessful, queries being proposed *separately* to all three of the adjudicators, when, strange to say, the whole trio laid the fault at the doors of each other, excusing themselves individually on the ground of "being outvoted."

I am confident, too, where a Poultry Judge acts solely on his own personal responsibility, giving no loop-hole for evasion or subterfuge in case his awards are open to objection, greater carefulness will be invariably elicited on his part to fulfil the duties efficiently, he well knowing the impossibility, if thus situated, of shifting the blame on to the shoulders of any other individual. If a large show of poultry, the classes might easily be apportioned to separate adjudicators, either by the special appointment of the managing Committee, or, were it deemed more advisable, by private arrangement among the Judges themselves, still leaving it patent to all exhibitors *who* officiated in any particular variety, and thus holding each Judge only responsible for his individual allotment. In such case "favouritism," which, wherever it has unhappily been practised, has proved itself equally a "twin curse on Poultry Exhibitions with the roup," can never be indulged. Private interests dare not be provided for, as immediate and certain reprehension could alone be the necessary sequence of such procedure on the part of any official who acted so unjustly. Nor can I myself accredit that any Poultry Judge would, when thus isolated, dare to make even an attempt so positively suicidal to his future creditability.

To some amateurs accustomed to take things as they find them, and who, perchance, merely forward their birds to distant localities, and afterwards quietly await the result of their success by the inspection of a printed prize-list, my remarks may not appear so vitally important as they really are to those availing themselves of the opportunity of personal inspection of the poultry during exhibition; whilst to not a few of the latter class several instances will recur to their recollection distressingly suggestive of the time-worn axiom that "kissing goes by favour." As in times by-gone such plague spots have unfortunately manifested themselves, and that, too, where after-proof convinced the most sceptical that private reasons existed for so flagrant and pertinaciously-adhered-to a decision, it cannot be deemed unreasonable to suppose that the greatly enhanced value of the

premiums now offered, combined with the infinitely closer approximation as to excellence of the contesting specimens of the poultry exhibited, will undoubtedly foster still stronger inducements for its repetition, to the increased annoyance of the ill-treated, though more deserving amateur, and the general decadence of good feeling among all except the special few, who by compact endeavour still to maintain inviolate practices that are so diametrically opposed to the perpetuity, or even present welfare, of our Poultry Exhibitions, and, I need scarcely add, alike adverse to the honourable intentions of those gentlemen by whom they were at the onset originated. But the plans I have just brought forward, if adopted, preclude even the possibility of its long continuance; indeed, blight at first effort "favouritism" of any and all kinds, whilst to a Poultry Judge, capable and anxious only to act independently of all parties, it offers no difficulty whatever. He feels his competency to fulfil the duty, or why undertake it? and obtains the manifest advantage, likewise, of arriving at his conclusions altogether unfettered by the opinions of others diverse from his own. I am myself fully cognisant of the extreme difficulty that is experienced in the satisfactory appointment of Judges by our Poultry Show Committees, gleaned as it is from the almost daily communications that I even yet receive from Committees in various parts of the kingdom, urging me to accept office as sole arbitrator for their particular meeting.

Still I unhesitatingly believe this trouble will prove a very temporary one if "confederacy," wherever exposed, is openly repudiated. There is not then a doubt, to those who may faithfully fulfil this admittedly important and anxious duty, that increased credit will redound; and certainly, after the dearly-bought experience of the last half dozen years past, it would indeed bespeak feelings very uncomplimentary to the poultry world to even barely suppose there are not numbers of individuals both able and willing to accept and fulfil the varied and responsible duties which the office of Poultry Judge invariably necessitates, and that, too, consistently, efficiently, and without any leaning whatever towards favour or affection.

As I conceive it the absolute and bounden duty of each amateur to do everything in his power to carry out "fair play to all," there certainly ought in every case of complaint, or even misgiving, as to the conduct of any Poultry Judge, to be an open accusation preferred, not purposely disguised under an anonymous signature, but one affording the like opportunities to all parties of publicly proving to the world "who are right and who are wrong."—EDWARD HEWITT, *Eden Cottage, Sparkbrook, Birmingham.*

CLASS 5.—PIGEONS WITH STRANGE VOICE.

VARIETY 2.—THE TRUMPETER (*Columba tympanisans*).

<i>French.</i>	<i>German.</i>
PIGEON GLOU-GLOU TAMBOUR.	TROMMELTAUBEN.



THE Trumpeter Pigeon is the second variety with a prolonged and gurgling voice, and from its fancied resemblance

to a distant trumpeting or drumming they derive their name.

I am inclined to consider them as originally obtained from Egypt or Arabia, as some of the best trumpeting birds I have had were from stock imported from Egypt. They are well known in some parts of Germany, where they are sometimes called Russian Pigeons.

The Trumpeters are rather larger than a common Pigeon, being of much stouter build, the beak is rather shorter and thicker, the neck fuller, and the chest and shoulders broader. They have handsome turned crowns, and are heavily feathered on the feet, these feathers, when unbroken, frequently measuring from five to six inches in length. Next to the peculiar voice, their most distinctive property is the tuft of feathers growing over the base of the beak, the feathers of which open and spread out in a rose in the form of a Pink or Carnation, and the larger and more even this tuft is the more they are valued. This tuft is not found in any other breed, and only occasionally in some of the crosses of it. The principal plumage appears to be quite white, of which I consider there are two distinct varieties—the small white with dark eyes, and the larger with pearl eyes. Blacks are also to be had, but black mottled are the most esteemed. The fanciers require them to be mottled with white only on the head, neck, and shoulders of the wings, and do not approve of any white in the tail and flights or under parts of the body. Blues, reds, and yellows are very rare. Pearl eyes are required in all the varieties except the small white, which are not so much esteemed on that account; but of whatever colour or marking, if it does not combine the peculiar tuft over the beak with the prolonged gurgling coo, it cannot be considered as a Trumpeter. Much stress is laid on this combination. The voice should be deep, sonorous, varied, and the longer it is continued the more are they prized.

They are merry Pigeons, very prolific, and good nurses, but on account of their feathered feet and heavy flight are not adapted to shift for themselves.

In Germany they have several varieties or crosses, which are more remarkable for their colour and marking than the purity of the breed. Some of these are red or yellow with white shoulders; others are white, with various-coloured shoulders like the Turbits, or with the addition of white bars, a few of which cross-bred birds have found their way to this country under various names.

The Trumpeter is regarded by naturalists as one of the purest varieties of our domestic Pigeons, and they affirm that if once crossed the breed cannot be bred back again; hence these cross-bred birds are always deficient in some point—either the voice or one of the turns are wanting. As a case in point, my father many years back was very desirous of obtaining some Trumpeter Pigeons, and could then only procure one cock and his half-bred daughter, from which he bred, matching the cock again with his daughters of the second and third generations, without obtaining one young bird with the tuft over the beak. At the fourth generation he reared a handsome, black-mottled young cock with the desired tuft; but, to his great disappointment, he did not trumpet, although he was fifteen-sixteenths pure bred, and breeding so close stopped reproduction. Surely such experiments go far to prove the distinctness of what are sometimes called mere varieties.—B. P. BRENT.

OUR LETTER BOX.

FOOD FOR BARNACLE GEESE.—"I have some young Barnacle Geese. I keep them on a small piece of grass in the front of my house, with a good-sized basin of water sunk in the ground, so that they are able to go in and out as they please. I have fed them with eggs, barleymeal, and wheatmeal mixed. Yesterday one of them died; it had a sort of croaking noise in the throat; it would not eat like the others. The goslings are a week old. Will you kindly inform me if I treat them right?"—TRALLWYN.

[Your goslings would have done better if they had been kept from the water altogether the first fortnight. Oatmeal is very good for them. The favourite food of Barnacle Geese is grass, and, as the young of a few days only cannot pull it, we should advise you to put a sod of growing grass in a shallow vessel, cover it with water, and then put in some oatmeal, and after a few days some whole corn. They are very fond of lettuces, and they are good for them. The fact of one dying does not indicate improper treatment, as one dies of almost every nest of birds of every sort.]

SPANISH COCK WITH SCABBY FACE (S. H.).—Take the bird away from the hens. They have pecked his face, and will continue to do so as long as there are any spots on the white part of it. Keep him on the same diet as hitherto.

COCHIN-CHINA HEN (A Subscriber, Edinburgh).—The symptoms may arise from many causes. Give her a dessert-spoonful of castor oil, and keep her on low diet—boiled potatoes, rice, and plenty of green vegetables.

DUCKWING GAME BANTAMS.—"I am sorry I cannot give "MERRY-LEGS" the information he requires respecting the origin of Duckwing Game Bantams, and, were I not in possession of the breed, should be quite at a loss to know how to produce them. If "MERRYLEGS" can breed Duckwing Game fowls without the introduction of Duckwing blood I think he may succeed with Bantams. I should very much like to know the origin of the Duckwing Game."—DANDY.

GAME PULLETS' EGGS.—"I have been particularly unsuccessful this year in hatching my Game fowls' eggs, which have been laid by pullets of last year. Is this likely to be a reason for their non-hatching?"—HIGH-FIELD.

[A pullet's first eggs should never be set, not because they are unproductive, but because the produce from them is always weak. You will probably find you have only neighbours' fare, and that the cold, dry weather has spoiled the eggs. Those who raise early chickens must study the weather. For some few years past we have had frosts in April quite severe enough to spoil eggs if exposed to them early in the morning.]

LONDON MARKETS.—JUNE 8TH.

COVENT GARDEN.

We have now a fair amount of business doing, and the supply good. The recent rains have greatly improved the condition of all garden produce. *Green Peas* of English growth have begun to arrive.

FRUIT.

Apples, kitchen, per bush.	8s. ,, 12s.
,, dessert, do..	12s. ,, 20s.
Pears, over	
Pine-apples, per lb....	8s. ,, 12s.
Grapes, per lb.....	10s. ,, 20s.
Peaches, per doz.	0s. ,, 0s.
Nectarines, do.	0s. ,, 0s.
Strawberries, per oz...	6d. ,, 1s.
,, Foreign, none	
Melons, Foreign, none	
,, English, do.	
Morello Cherries, per lb.	0s. ,, 0s.
Oranges, per 100	4s. ,, 12s.
,, Tangerine, none	
,, Seville, do...	6s. ,, 12s.
Lemons	6s. ,, 10s.
Almonds, per lb.	2s. 6d. ,, 4s.
Nuts, Filberts, none	
,, Cobs, per lb. 1s. 6d. ,,	0s.
,, Barcelona, per bushel.....	20s. to 24s.
Nuts, Brazil, ditto..	14s. ,, 16s.
Walnuts, per 1000 ..	10s. ,, 15s.
Chestnuts, per bushel	16s. ,, 24s.

VEGETABLES.

Cabbages, each	9d. to 1s. 6d.
,, Red, each	3d. to 6d.
Cauliflowers, each....	6d. ,, 1s.
Broccoli, per bble. 1s. 3d. to 1s. 9d.	
Greens, per doz. bunch.	2s. ,, 4s.
Spinach, per sieve ..	— ,, 4s.
French Beans, per hd.	1s. ,, 2s.
Carrots, per bunch ..	5d. to 7d.
Parsnips, per doz....	9d. ,, 1s.

Beet, per doz.	1s. to 6s. 1d.
Potatoes, per cwt. ..	7s. to 10s.
Onions, Y'ng per b'nch	4d. ,, 6d.
,, Old, per bush. 3s. ,,	4s. 6d.
Turnips, per bunch..	3d. ,, 4d.
Leeks, per bunch	2d. ,, 3d.
Garlic, per lb.	6d. ,, 8d.
Horseradish, per bundle	2s. ,, 4s.
Shallots, per lb.	6d. ,, 8d.
Lettuce, Cos, each, French	6d. ,, 1s.
,, Cabbage, do. do. — ,,	1½d.
Endive, do. do.	— ,, 4d.
Celery, per bunch....	9d. to 1s. 6d.
Radishes, Turnip, per dozen bunches	— ,, 4s.
Ditto, long, per hund..	— ,, 6d.
Water Cresses, per doz.	9d. to 1s.
Small Salad, per punnet	2d. ,, 3d.
Artichokes, per lb....	— ,, 2d.
Asparagus, per bundle	4s. ,, 8s.
Sea-kale, per punnet..	1s. ,, 2s.
Rhubarb, per bundle	2d. ,, 4d.
Cucumbers, each....	9d. to 1s. 6d.
Mushrooms, per pottle	1s. ,, 2s.

HERBS.

Basil, per bunch	4d. to 6d.
Marjoram, per bunch	4d. ,, 6d.
Fennel, per bunch ..	2d. ,, 3d.
Savory, per bunch ..	2d. ,, 3d.
Thyme, per bunch ..	2d. ,, 3d.
Parsley, per bunch ..	2d. ,, 3d.
Mint, per bunch	2d. ,, 4d.
Green Mint	6d. ,, 8d.

POULTRY.

There has been a considerable increase in the demands, and the supply has not kept pace with it.

Large fowls.. 7s. 0d. to 8s. 0d. each.	Guinea Fowls 4s. 0d. to 4s. 6d. each.
Smaller do..... 5s. 6d. to 6s. ,,	Pigeons..... 10d. to 11d. ,,
Chickens .. 3s. 0d. to 4s. 6d. ,,	Rabbits.... 1s. 5d. to 1s. 6d. ,,
Goslings..... 5s. 6d. to 6s. ,,	Wild ditto..... 10d. ,,
Ducklings.. 4s. 0d. to 4s. 6d. ,,	Leverets.... 3s. 0d. to 4s. 6d. ,,

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—June 9, 1857.

CRYSTAL PALACE.

GRAND HORTICULTURAL EXHIBITION,

MAY 30, 1857.—LIST OF SUCCESSFUL COMPETITORS.

FLOWERS.

CLASS

- I.—20 STOVE AND GREENHOUSE PLANTS, in flower.**
 £30 0 T. Whitebread, Gardener to Henry Colyer, Esq., Dartford
 20 0 J. Green, Gardener to Sir Edmond Antrobus, Lower Cheam, Surrey, and W. Taylor, Gardener to J. Coster, Esq., Streatham
 10 0 T. Page, Gardener to William Leaf, Esq., Park Hill, Streatham Common
 7 0 E. A. Hamp, Gardener to James Thorne, Esq., Mawbey House, South Lambeth
 4 0 (Extra) W. J. Epps, High Street, Maidstone
- II.—12 STOVE AND GREENHOUSE PLANTS, in flower.**
 £18 0 G. S. Dods, Gardener to Sir John Cathcart, Cooper's Hill, Chertsey
 12 0 S. M. Carson, Gardener to W. F. G. Farmer, Esq., Nonsuch Park, Surrey
 6 0 B. Peed, Gardener to T. Tredwell, Esq., St. John's Lodge, Norwood
 4 0 S. Morris, Gardener to Coles Child, Esq., Bromley, Kent
- III.—6 STOVE AND GREENHOUSE PLANTS, in flower.**
 £10 0 J. Peed, Gardener to C. T. Gabriel, Esq., Norfolk House, Streatham
 6 0 O. Rhodes, Gardener to J. Philpott, Esq., Stamford Hill
 3 0 W. Cutbush, Nurseryman, Barnet
 2 0 T. Frost, Gardener to E. L. Betts, Esq., Preston Hall, Maidstone
 2 0 (Equal) W. Kaile, Gardener to Right Hon. the Earl of Lovelace, East Horsley
 1 10 (Extra) G. Webb, Gardener to H. Walmisley, Esq., Easton Lodge, Tulse Hill
 1 10 (Extra) G. Young, Gardener to W. Stone, Esq., Dulwich Hill
 1 10 (Extra) R. Baxendine, Gardener, Ridenhurst, near Guildford
 1 10 (Extra) G. T. Brush, Gardener to Jos. Tritton, Esq., Bloomfield Hall, Norwood
 1 10 (Extra) T. Williams, Gardener to Miss Traill, Hayes Place, Kent
 1 10 (Extra) J. George, Gardener to J. W. Nicholson, Esq., Stamford Hill
- IV.—25 STOVE AND GREENHOUSE PLANTS, Grouped for effect, in or out of flower.**
 £25 0 J. Veitch and Son, Exotic Nurseries, Exeter and Chelsea
 15 0 R. Parker, Paradise Nursery, Holloway
 10 0 A. Bye, Gardener to G. S. Wintle, Esq., Uppercoote Gardens, Gloucester
 7 0 T. Jackson and Son, Nurserymen, &c., Kingston, Surrey
 5 0 S. Morris, Gardener to Coles Child, Esq., Bromley, Kent
 5 0 G. Young, Gardener to W. Stone, Esq., Dulwich Hill
 2 10 J. Epps, Nurseryman, &c., High Street, Maidstone
- V.—20 ORCHIDS, of Exotic species (Amateurs).**
 £30 0 W. Gedney, Gardener to Mrs. Ellis, Hoddesdon
 20 0 S. Woolley, Gardener to H. B. Ther, Esq., Cheshunt
- VI.—20 ORCHIDS, of Exotic species (Nurserymen).**
 £30 0 J. Veitch & Son, Exotic Nursery, Exeter and Chelsea
 20 0 T. Jackson & Son, Nurserymen, Kingston
 10 0 Robert Parker, Nurseryman, &c., Paradise Nursery, Holloway
- VII.—12 ORCHIDS, of Exotic species (Amateurs).**
 £15 0 S. M. Carson, Gardener to W. F. G. Farmer, Esq., Nonsuch Park, Surrey
 10 0 M. Clarke, Gardener to Charles Webb, Esq., High Grounds, Hoddesdon
 7 0 W. Keele, Gardener to Dr. Butler, Woolwich, Kent

£5 0 S. Morris, Gardener to Coles Child, Esq., Bromley, Kent

VIII.—6 ORCHIDS, of Exotic species.

- £10 0 G. S. Dods, Gardener to Sir John Cathcart, Cooper's Hill, Chertsey
 6 0 R. Grix, Gardener to the late A. Palmer, Esq., Cheam Park, Surrey
 3 0 John Green, Gardener to Sir E. Antrobus, Bart., Lower Cheam, Surrey

IX.—12 GREENHOUSE AZALEAS.

- £18 0 J. Green, Gardener to Sir E. Antrobus, Bart., Lower Cheam, Surrey
 12 0 S. M. Carson, Gardener to W. F. G. Farmer, Esq., Nonsuch Park, Surrey
 6 0 J. & J. Fraser, Nurserymen, &c., Lea Bridge Road
 4 0 B. Peed, Gardener to T. Tredwell, Esq., St. John's Lodge, Norwood
 1 10 T. Gaines, Nurseryman, &c., Surrey Lane, Battersea
 1 10 J. Peed, Gardener to C. T. Gabriel, Esq., Norfolk House, Streatham

X.—6 GREENHOUSE AZALEAS (Amateurs).

- £8 0 T. Page, Gardener to W. Leaf, Esq., Park Hill, Streatham
 6 0 W. Taylor, Gardener to J. Coster, Esq., Streatham
 4 0 J. Tegg, Gardener to Baron Hambro', Roehampton, Surrey
 3 0 Osman Rhodes, Gardener to J. Philpott, Esq., Stamford Hill
 1 10 G. Young, Gardener to W. Stone, Esq., Dulwich Hill

XI.—12 GREENHOUSE AZALEAS of new kinds.

- £10 0 J. Green, Gardener to Sir E. Antrobus, Bart., Lower Cheam, Surrey
 7 0 (Equal) J. Ivery and Son, Nurserymen, Dorking, and W. Taylor, Gardener to J. Coster, Esq., Streatham
 4 0 B. Peed, Gardener to T. Tredwell, Esq., St. John's Lodge, Norwood
 3 0 W. J. Epps, Nurseryman, High Street, Maidstone

XII.—6 CHINESE AZALEAS, species imported since 1844.

£4, £3, £2, no competition

XIII.—6 HELICHRYSUMS.

- £4 0 W. Laybank, Gardener to Thomas Maudsley, Esq., Norwood
 3 0 T. Page, Gardener to William Leaf, Esq., Park Hill, Streatham
 2 0 W. Cutbush, Nurseryman, &c., Barnet, Herts
 1 0 J. Green, Gardener to Sir E. Antrobus, Bart., Lower Cheam
 1 0 O. Rhodes, Gardener to J. Philpott, Esq., Stamford Hill

XIV.—10 CAPE HEATHS.

- £8 0 B. Peed, Gardener to T. Tredwell, Esq., Norwood
 6 0 T. Williams, Gardener to Miss Traill, Hayes Place, Kent
 5 0 O. Rhodes, Gardener to J. Philpott, Esq., Stamford Hill
 4 0 W. Cutbush, Nurseryman, Barnet, Herts
 2 0 R. Glendinning, Nurseryman, Chiswick, Middlesex

XV.—6 CAPE HEATHS (Amateurs).

- £6 0 G. Young, Gardener to W. Stone, Esq., Dulwich Hill
 4 0 W. Taylor, Gardener to J. Coster, Esq., Streatham
 3 0 J. Peed, Gardener to C. T. Gabriel, Esq., Norfolk House, Streatham
 1 10 J. Harlock, Gardener to R. W. Nutter, Esq., Wanstead, Essex

XVI.—6 TALL CACTI, species or varieties of, in flower, large plants.

- £7 0 J. Green, Gardener to Sir E. Antrobus, Bart., Lower Cheam, Surrey
 5 0 R. Grix, Cheam Park, Surrey
 3 0 W. Mortimer, Gardener to J. R. Scott, Esq., Crouch End, Hornsey

XVII.—12 ROSES in pots, distinct kinds.

- £10 0 A. Paul & Son, Nursery, Cheshunt
 7 0 E. P. Francis, Nursery, Hertford

CLASS

XVIII.—6 ROSES in pots, distinct kinds (Amateurs).

- £5 0 A. Rowland, Esq., Rosenthal, Lewisham
 4 0 M. Busby, Gardener to John Crawley, Esq., Stockwood Park, Luton
 2 0 W. Mortimer, Gardener to G. R. Scott, Esq., Crouch End, Hornsey

XIX.—12 CALCEOLARIAS, distinct varieties, in pots not more than 11 inches in diameter.

- £5 0 J. Dobson & Son, Woodlands Nursery, Isleworth
 5 0 (Extra) C. Turner, Royal Nursery, Slough
 4 0 G. Lambert, Oakwood, Chichester
 3 0 J. Cole, Keyfield Nurseries, St. Alban's
 3 0 R. Pryer, Gardener to W. J. Carne, Esq., Tulse Hill, Brixton

XX.—6 FUCHSIAS in pots, distinct varieties.

- £4 0 T. Reid, Gardener to T. N. Farquhar, Esq., Sydenham
 3 0 E. Harper, Gardener to J. F. Bennett, Esq., Upper Tulse Hill
 2 0 A. Bousie, Gardener to the Right Hon. H. Labouchere, Slough
 1 0 G. Blundell, Gardener to D. Rowland, Esq., Sydenham Hill
 1 0 H. Chilman, Gardener to Mrs. Smith, Ashstead House, near Epsom
 1 0 H. Elliott, Gardener to C. Davidson, Esq., Sydenham Hill

XXI.—12 PELARGONIUMS, distinct varieties, in pots not more than 8 inches in diameter (Amateurs).

- £10 0 W. Nye, Gardener to E. Foster, Esq., Manor, Berks
 7 0 J. Wiggins, Gardener to E. Beck, Esq., Isleworth
 5 0 T. Windsor, Gardener to — Cannon, Esq., Hampstead
 4 0 W. Holder, Gardener to the Rev. E. Coleridge, Eton College
 2 0 J. Weir, Gardener to John Hodgson, Esq., The Elms, Hampstead
 1 10 G. Lambert, Oakwood, Chichester, Sussex

XXII.—12 PELARGONIUMS, distinct varieties, in pots not more than 8 inches in diameter (Nurserymen).

- £10 0 C. Turner, Royal Nursery, Slough
 7 0 J. and J. Fraser, Lea Bridge Nurseries
 5 0 J. Dobson & Son, Woodlands Nursery, Isleworth
 4 0 W. Bragg, Star Nursery, Slough
 1 10 W. Cutbush & Sons, Nurserymen, Highgate
 1 10 T. Gaines, Nurseryman, Surrey Lane, Battersea

XXIII.—6 FANCY PELARGONIUMS, distinct varieties, in pots not more than 8 inches in diameter (Amateurs).

- £5 0 A. Bousie, Gardener to the Right Hon. H. Labouchere, Slough
 3 0 T. Windsor, Gardener to Charles Cannon, Esq., Hampstead
 2 0 G. Lambert, Oakwood, Chichester, Sussex
 1 10 J. Weir, Gardener to John Hodgson, Esq., The Elms, Hampstead
 1 0 W. Mockett, Gardener to J. Allnutt, Esq., Clapham Common

XXIV.—6 FANCY PELARGONIUMS, distinct varieties, in pots not more than 8 inches in diameter (Nurserymen).

- £5 0 C. Turner, Royal Nursery, Slough
 3 0 J. & J. Fraser, Lea Bridge Nursery
 2 0 W. Bragg, Slough
 1 0 (Extra) T. Gaines, Battersea
 1 0 (Extra) J. Dobson & Son, Isleworth

XXV.—NEWLY-INTRODUCED or EXTREMELY RARE PLANTS, remarkable for their beauty, in flower.

- £3 0 J. Veitch & Son, Exeter and Chelsea, Rhododendron Veitchi
 2 0 J. Jackson & Son, Kingston, Surrey, Cypripedium sp. nova
 1 0 J. Veitch & Son, for Odontoglossum Reicheneri

XXVI.—NEWLY-INTRODUCED or EXTREMELY RARE PLANTS, remarkable for their beauty, not in flower

- £3 0 R. Glendinning, Chiswick, Farfugium grande
 2 0 J. Veitch & Son, Exeter and Chelsea, Plectranthus, sp.
 1 0 Ditto, Hippomane spinosa
 1 0 W. Cutbush & Son, Highgate, for Solanum purpureum

XXVII. HARDY ORNAMENTAL PLANTS, remarkable for their fine habit or beauty of foliage.

- £3 0 J. Veitch & Son, Exeter and Chelsea, Wellingtonia gigantea
 2 0 Ditto, Abies Kämpferi
 1 0 Ditto, Thuja gigantea
 0 15 J. Hally, Nurseryman, Blackheath, for Cephalotaxus Fortunei

XXVIII.—SEEDLING PELARGONIUMS of 1856 and 1857.

- £1 0 E. Beck, Esq., Isleworth, for Pelargonium Bride
 0 15 C. Turner, Royal Nursery, Slough, Fancy Pelargonium Acme
 0 10 — Beck, Pelargonium Signora

XXIX.—6 Plants of NEPENTHES, with Pitchers.

- £10 0 W. Gedney, Gardener to Mrs. Ellis, Hoddesdon

XXX.—6 Plants of ANECTOCHILUS and PHYSURUS.

- £3 0 J. Veitch & Son, Exotic Nurseries, Exeter and Chelsea
 2 0 A. Bye, Gardener to J. S. Wintle, Esq., Hucclecote Gardens, near Gloucester
 1 0 W. Cutbush, Barnet, Herts

XXXI.—12 EXOTIC FERNS.

- £4 0 R. Parker, Paradise Nursery, Holloway
 3 0 (Equal) J. Veitch & Son, Exotic Nurseries, Exeter and Chelsea, and F. Fletcher, Gardener to J. F. Young, Esq., Upper Kennington Lane
 2 0 W. Gedney, Gardener to Mrs. Ellis, Hoddesdon

XXXII.—MISCELLANEOUS.

- £3 0 T. Sims, Foot's Cray, Kent
 2 10 S. Morris, Gardener to Coles Child, Esq., Bromley
 W. Bragg, Slough, for collection of Tulips
 H. Lavey, Gardener to E. A. De Grave, Esq., Fetcham, collection of British Ferns
 J. James, Gardener to W. F. Watson, Esq., Isleworth, for a collection of Pansies
 1 10 J. Hally, Nurseryman, &c., Blackheath, collection of Lycopodiums
 F. Fletcher, Gardener to J. E. Young, Esq., Upper Kennington Lane, collection of Gloxinias
 W. Bragg, Star Nursery, Slough, for collection of Pansies
 S. Morris, Gardener to Coles Child, Esq., for collection of Lycopods.
 1 0 J. James, Gardener to W. F. Watson, Esq., Isleworth
 Messrs. Veitch & Son, Exotic Nurseries, Exeter and Chelsea, for Rhododendron Brookeanum
 Ditto for Rhododendron Princess Royal
 W. Bragg, for Cut Pansies
 Ditto, for Geranium Unique
 J. Holland, Gardener to Robert W. Peake, Esq., Spring Grove, Hounslow, for Cinerarias
 J. August, Rose Cottage, Beddington, Surrey, for 12 pots of Pansies
 W. Mockett, Gardener to J. Allnutt, Esq., Clapham Common, collection of Gloxinias
 J. Green, Gardener to Sir E. Antrobus, Bt., Lower Cheam, Surrey, for Rhododendron Dalhousiae
 E. A. Hamp, Gardener to James Thorne, Esq., Mawbey House, South Lambeth, collection of Amaryllis
 S. Morris, Gardener to Coles Child, Esq., Bromley, Kent, for Rhododendron cinnabarinum
 0 15 E. P. Shenton, Hendon Park Villas, Hendon, for a collection of Pansies, stand of 24 blooms
 J. Dobson and Son, Woodlands Nursery, Isleworth, stand of Pansies
 R. Glendinning, Chiswick Nursery, for Geaneri Donckelaari
 W. J. Epps, Maidstone, for Gloxinias
 E. P. Francis, Nurseries, Hertford, collection of Roses on Manetti stocks

- £0 15 H. Lavey, Gardener to E. A. De Grave, Esq., of Fetcham, for Scarlet Geraniums and Achimenes
 A. Henderson, Pine Apple Nursery, for Lilium giganteum
 0 10 W. Kaile, Gardener to Rt. Hon. Earl Lovelace, East Horsley Tower, near Ripley, Surrey, 8 Plants various
 C. Turner, for Petunia Attraction

FRUIT.**A.—COLLECTIONS OF FRUIT in 8 dishes, consisting of at least 5 distinct kinds.**

- £4 0 J. Nichol, Gardener to General Stadd, Oxon House, near Exeter, Devon

B.—PINE APPLES, Collections of 3, viz., Providence, Smooth Cayenne, and Black Prince, or any other variety.

- £6 0 J. Davis, Oakhill, Barnet
 4 0 R. Turnbull, The Gardens, Blenheim Palace
 2 0 J. Temple, Dowlais Iron Co., Merthyr Tydvil
 2 0 (Extra) W. Davies, Starch Green, Hammersmith

- 1 10 (Extra) B. Peed, Gardener to T. Tredwell, Esq., Norwood

C.—PINE APPLE, single Fruit of the Providence.

- £3 0 W. Davies, Starch Green, Hammer-smith

D.—PINE APPLE, single Fruit of the Queen, any variety.

- £3 0 T. Dawson, Gardener to Earl Cowper, Panshanger
 2 0 R. Turnbull, The Gardens, Blenheim Palace
 1 0 T. Bray, Gardener to J. B. Lousada, Esq., Sidmouth
 0 15 (Extra) J. Davis, Oakhill, East Barnet
 0 10 (Extra) C. Smith, Gardener to A. Anderson, Esq., Norwood Grove

E.—PINE APPLE, single Fruit of the Jamaica, or any variety not named above.

- £3 0 J. Davis, Oakhill, East Barnet
 2 0 J. Gillham, Isleworth
 1 0 J. Temple, Dowlais Ironworks, Merthyr Tydvil
 0 15 (Extra) T. Dawson, Gardener to Earl Cowper, Panshanger

F.—GRAPES, Collections of 3 dishes, of 3 distinct kinds.

- £3 0 (Equal 2nds) R. Turnbull, The Gardens, Blenheim Palace
 3 0 (Equal 2nds) T. Frost, Gardener to E. L. Betts, Esq., Maidstone
 2 0 J. Tegg, Gardener to Baron Hambro', Roehampton
 1 10 (Extra) W. Reid, Gardener to James Hunt, Esq., Sydenham
 1 0 (Extra) Mitchell & Co., Bristol Nursery, Kemp Town, Brighton
 1 0 (Extra) J. Monro, Gardener to Mrs. Oddie, St. Alban's
 G.—GRAPES, Black, single dish.
 £3 0 T. Frost, Gardener to E. L. Betts, Esq., Maidstone

- 2 0 G. S. Dods, Gardener to Sir John Cathcart, Chertsey

- 2 0 G. Fleming, Trentham Hall Gardens, Staffordshire

- 1 0 E. Bundle, Gardener to G. Soares, Esq., Streatham

- 1 0 M. Henderson, Cole Orton Hall, Ashby-de-la-Zouch

- 1 0 J. Davis, Oakhill, East Barnet

- 0 15 (Extra) M. Clarke, Gardener to Charles Webb, Esq., Hoddesdon

- 0 10 (Extra) J. Cross, Gardener to Rt. Hon. Lord Ashburton, Addiscombe

- 0 10 (Extra) G. Wortley, Gardener to Mrs. Maubert, Norwood

H.—GRAPES, White, single dish.

- £3 0 M. Henderson, Cole Orton Hall, Ashby-de-la-Zouch

- 2 0 C. Smith, Gardener to A. Anderson, Esq., Norwood Grove

- 1 0 H. Jackson, Gardener to G. Beaufoy, Esq., South Lambeth

- 1 0 (Extra) T. Bailey, Shardeloes Gardens

- 0 10 (Extra) M. Busby, Gardener to John Crawley, Esq., Stockwood Park, Luton, Beds.

- 0 10 (Extra) Mitchell & Co., Bristol Nursery, Kempton, Brighton

I.—GRAPES, Muscat, single dish.

- £4, £3, £2. No competition

- J.—GRAPES, 12 lbs. weight (Market Gardeners only).
 £4 0 J. A. Watson, Market Gardener, Ealing, Middlesex
 3 0 (Equal) Spary & Campbell, Queen's

- Graperies, Brighton; W. Kay, Finchley

- £2 0 (Equal) Mitchell & Co., Bristol Nurseries, Brighton; J. Davis, Oakhill, Barnet

- 1 0 (Equal) C. W. Alderson, the Vineries, Langley Lane, South Lambeth; E. Skeen, Nelson Lodge, Stoke Newington

K.—PEACHES, single dish of one kind only.

- £3 0 H. Constantine, Gardener to C. Mills, Esq., Hillingdon Court

- 2 0 W. Hill, Gardener to R. Sneyd, Esq., Keele Hall, Stafford

- 1 0 G. Fleming, Trentham Gardens

- 0 10 (Extra) E. Tomlinson, Gardener to Sir E. Antrobus, Bart., Amesbury, Wilts

L.—NECTARINES, single dish of one kind only.

- £3 0 M. Busby, Gardener to John Crawley, Esq., Stockwood Park, Luton, Beds.

- 2 0 G. Fleming, Trentham, Staffordshire

- 1 0 W. Hill, Gardener to R. Sneyd, Esq., Keele Hall, Staffordshire

- 1 0 E. Tomlinson, Gardener to Sir E. Antrobus, Bart., Amesbury, Wilts

- 0 15 (Extra) J. Nichol, Gardener to General Stadd, Oxton House, near Exeter

M.—MELONS, Persian, or hybrids from it, the heaviest.

- £2 0 P. Boreham, Gardener to Sir Fitzroy Kelly, M.P., The Chantry, Ipswich

- 1 0 T. Page, Gardener to W. Leaf, Esq., Park Hill, Streatham

N.—MELONS, green-fleshed, single fruits.

- £2 0 W. Kaile, Gardener to Rt. Hon. Earl of Lovelace, Ripley

- 1 0 J. G. Fleming, Trentham Hall Gardens, Staffordshire

- 0 10 (Extra) T. Blake, Gardener to E. Green, Esq., Sprangewells, Ware, Herts

- 0 10 (Extra) T. Page, Gardener to W. Leaf, Esq., Park Hill, Streatham

O.—MELONS, scarlet-fleshed, single fruits.

- £1 0 W. Taylor, Gardener to J. Coster Esq., Streatham

P.—FIGS, single dish, consisting of 10 fruits.

- £2 0 C. Hutt, Gardener to Miss Coutts, Holly Lodge, Highgate

Q.—CHERRIES, in collections of three kinds, 1 dish of each, in Fifties.

- £4 0 G. Fleming, Trentham Hall Gardens, Staffordshire

R.—CHERRIES, single dish (white), in Fifties. No competition.**S.—CHERRIES, single dish (black), in Fifties.**

- £2 0 E. Shuter, Gardener to Earl of Wilton, Heaton, Manchester

- 1 5 T. Frost, Gardener to E. L. Betts, Esq., Preston Hall, Maidstone

- 0 15 R. Wilson, Saltisford, Warwick.

T.—PLUMS, single dish, 10 fruits. No competition.**U.—STRAWBERRIES, collections of 3 dishes, British Queen, Keens' Seedling, and any other variety.**

- £3 0 (Equal) R. Turnbull, Gardens, Blenheim Palace, and J. A. Watson, Market Gardener, Vine Garden, Ealing.

W.—STRAWBERRIES, single dish, in Fifties.

- £2 0 W. Smith, Twickenham

- 1 5 J. A. Watson, Market Gardener, Vine Garden, Ealing.

- 1 5 W. Dunsford, Chingford, Essex

- 0 15 W. Wallace, Market Gardener, Barnes, Surrey

- 0 10 (Extra) R. Turnbull, Blenheim Palace

- 0 10 (Extra) J. Gillham, Isleworth

X.—VINES IN POTS, with ripe fruit, 4 plants.

- £5 0 C. Hutt, Gardener to Miss Coutts, Highgate

- 4 0 W. Kaile, Gardener to the Hon. Earl Lovelace, East Horsley

- 3 0 Henry Jackson, Gardener to G. Beaufoy, Esq., Lambeth

Y.—PEACHES AND NECTARINES IN POTS, 4 plants.—No competition.**Z.—PLUMS, APRICOTS, CHERRIES, &c., IN POTS, 4 plants.—No competition.****MISCELLANEOUS.**

- £2 0 J. Williams, Gardener to Mrs. Warner, Hoddesdon

- 1 10 T. Bailey, Gardener to J. J. Drake, Esq., Amersham

- 1 0 W. Kaile, Gardener to the Right Hon. Earl Lovelace, East Horsley Tower

- 1 0 S. Elliott, Gardener to Mrs. Barnes, Lower Sydenham

- 1 0 James Sleate, Gardener to De Mattos, Esq., Weston Hill.

HORTICULTURAL SOCIETY OF LONDON.

EXHIBITION AT THE GARDENS, June 3 and 4, 1857.—Award of the Judges.

Section I.—ORNAMENTAL PLANTS.

FIFTEEN MIXED STOVE AND GREENHOUSE PLANTS (in flower).—1st, Mr. Dods, Gardener to Sir John Cathcart, Bart., F.H.S.; 2nd, Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S.; 3rd, Mr. W. Taylor, Gardener to J. Coster, Esq., Streatham; (Extra ditto) Mr. Baxter, Gardener to A. Basset, Esq., Stamford Hill; (Extra ditto) Mr. Rhodes, Gardener to P. Philpott, Esq., Stamford Hill.

TEN MIXED STOVE AND GREENHOUSE PLANTS.—1st, Mr. Peed, Gardener to T. Treadwell, Esq., Lower Norwood; 2nd, Mr. Carson, Gardener to W. F. G. Farmer, Esq., Nonsuch Park, Cheam; 3rd, Mr. W. Cutbush, F.H.S., Nurseryman, Barnet; (Extra ditto) Mr. R. Baxendine, Gardener to W. H. Smallpiece, Esq., Ridgihurst, Surrey.

SIX MIXED STOVE AND GREENHOUSE PLANTS.—1st, Mr. Dods; 2nd, Mr. Rhodes; 3rd, Mr. J. Peed, Gardener to C. S. Gabriel, Esq., Streatham; (Extra ditto) Mr. W. Cutbush, F.H.S.

FIFTEEN ORCHIDS (Amateurs).—1st, Mr. C. Pilcher, Gardener to S. Rucker, Esq., F.H.S., Wandsworth; 2nd, Mr. W. Gedney, Gardener to W. Ellis, Esq., F.H.S., Hoddesdon; 3rd, Mr. S. Williams, Gardener to C. B. Warner, Esq.

TEN ORCHIDS (Amateurs).—1st, Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S.; 2nd, Mr. Keele, Gardener to J. Butler, Esq., Woolwich; 3rd, Mr. S. Woolley, Gardener to Henry Bellenden Ker, Esq., Cheshunt.

SIX ORCHIDS (Amateurs).—1st, Mr. R. Grix, Gardener to Mrs. Palmer, Cheam; 2nd, Mr. Baxter, Gardener to A. Bassett, Esq.; 3rd, Mr. Woolley, Gardener to H. B. Ker, Esq.; 4th, Mr. Dods, Gardener to Sir John Cathcart, Bart., F.H.S.

FIFTEEN ORCHIDS (Nurserymen).—1st, Messrs. J. Veitch; 2nd, Messrs. Jackson; 3rd, Mr. Parker, Paradise Nursery, Holloway.

TEN CHINESE AZALEAS.—1st, Mr. Green; 2nd, Messrs. Lane and Son, Nurserymen, Great Berkhamstead; 3rd, Messrs. Ivery and Son, Nurserymen, Dorking and Reigate; (Extra ditto) Mr. Peed, Gardener to T. Treadwell, Esq., Lower Norwood.

SIX CHINESE AZALEAS (Amateurs).—1st, Mr. Carson; 2nd, Mr. W. Taylor; 3rd, Mr. Green; (Extra ditto) Mr. Rhodes.

EIGHT ROSES IN POTS (Amateurs).—1st, A. Rowland, Esq., F.H.S., Lewisham; 2nd, Mr. Terry, Youngsbury; 3rd, Mr. W. Mortimer, Gardener to J. R. Scott, Esq., F.H.S., Hornsey.

TWELVE ROSES IN POTS (Nurserymen).—1st, Messrs. Lane & Son; 2nd, Messrs. A. Paul & Son, Nurserymen, Cheshunt.

SIX CAPE HEATHS.—1st, Mr. Peed, Gardener to T. Treadwell, Esq.; 2nd, Mr. W. Taylor; 3rd, Mr. W. Cutbush; (Extra ditto) Mr. J. Peed, Gardener to C. Gabriel, Esq., Streatham; (Extra ditto) Mr. Rhodes.

EIGHT PELARGONIUMS (Amateurs).—1st, Mr. Wiggins, Gardener to E. Beck, Esq., F.H.S.; 2nd, Mr. Nye, Gardener to E. Foster, Esq., Clewer Manor, Isleworth; 3rd, Mr. J. Windsor, Gardener to C. Cannon, Esq., Hampstead; (Commended) Mr. J. Weir.

TWELVE PELARGONIUMS (Nurserymen).—1st, Mr. Turner, F.H.S.; 2nd, Messrs. Dobson; 3rd, Messrs. Fraser; (Commended) Mr. Bragg.

SIX FANCY PELARGONIUMS (Amateurs).—1st, Mr. Bousie, Gardener to the Right Hon. H. Labouchere, Stoke Park, Slough; 2nd, Mr. Windsor; 3rd, Mr. Weir.

EIGHT FANCY PELARGONIUMS (Nurserymen).—1st, Mr. Turner, F.H.S.; 2nd, Messrs. Fraser; 3rd, Mr. Bragg.

RHODODENDRONS (in Sixes).—1st, Mr. Standish, Bagshot; 2nd, Mr. C. Noble, Bagshot.

RHODODENDRONS (Sikkim and Bootan kinds).—2nd, Messrs. Jackson; 3rd, Messrs. Cutbush.

TWENTY VARIEGATED PLANTS.—1st, Messrs. Veitch; 2nd, Mr. Parker; 3rd, Mr. Bye, Gardener to G. S. Wintle, Esq., Hucclecote; 3rd, Messrs. Jackson; 3rd, Mr. Cutbush; Certificate, 1st class, Mr. J. Salter, Hammersmith.

TWELVE PLANTS WITH FINE FOLIAGE.—1st, Messrs. Veitch; 2nd, Mr. Parker; 3rd, Mr. Bye, Gardener to G. S. Wintle, Esq.

SIX TALL CACTI.—1st, Mr. Mortimer, Gardener to J. R. Scott, Esq., Hornsey; 2nd, Mr. Green.

TWELVE STOVE AND GREENHOUSE FERNS.—1st, Mr. Parker; 2nd, Messrs. Veitch; 3rd, Messrs. Jackson.

TEN LYCOPODS.—1st, Mr. Parker; 2nd, Messrs. Veitch; 3rd, Mr. W. Gedney, Gardener to W. Ellis, Esq., F.H.S.; 4th, Mr. F. Williams, Gardener to C. B. Warner, Esq., F.H.S.

NEW OR RARE PLANTS, IN FLOWER.—1st Class, Messrs. Backhouse, Chyris Limminghi; Messrs. Veitch, a new species of Thibaudia and Rhododendron Veitchi. 2nd, Class, Messrs. Veitch, Ceanothus Lobbi; Pernettya, sp. n. from Patagonia; Mr. Glendinning, Statice macroptera. 3rd Class, Messrs. Veitch, Grevillea Drummondii; Mr. Cutbush, Eucharis amazonica; Mr. Jackson, Cypripedium hirsutissimum.

NEW OR RARE PLANTS, NOT IN FLOWER.—1st Class, Messrs. Veitch, Thuopsis dolabrata and Abies Kämpferi; Mr. Glendinning, Abies Kämpferi and Farfugium grande. 2nd Class, Mr. Glendinning, Aralia papyrifera; Messrs. Veitch, Theophrasta imperialis and T. macrophylla, Hippomane spinosa, Cissus sp. with purple variegated leaves, and Rhopala Skinneri; Mr. Linden, Cyanophyllum magnificum.

NEW GARDEN HYBRIDS.—2nd, Messrs. Henderson, St. John's Wood, Gesnera Mielezi.

MISCELLANEOUS.—1st Class Certificate, Mr. Turner, Shrubby Calceolarias; ditto, Mr. Turner, Spotted Pelargonium; ditto, Mr. Parker, collection of ten Plants; ditto, Messrs. Ivery, collection of Azaleas; ditto, Messrs. Veitch, collection of Conifers; ditto, Messrs. Veitch, Anætochili. 2nd Class Certificate, Mr. Gedney, Gardener to W. Ellis, Esq., F.H.S., six Nepenthes.

FLORISTS' FLOWERS.—1st Class Certificate, Mr. Turner, Fancy Pelargonium Acme; ditto, Mr. Wiggins, Gardener to E. Beck, Esq., F.H.S., Fancy Pelargonium The Bride.

Section II.—FRUIT.

PINE APPLES, PROVIDENCE AND OTHER LARGE SORTS.—1st, Mr. T. Bailey, Gardener to T. T. Drake, Esq., Shardeloes, Amersham; 2nd, Mr. W. Davies, Starch Green.

PINE APPLES, JAMAICAS, QUEENS, &c.—1st, Mr. Daniel Clements; 2nd, Mr. Bray, Gardener to J. B. Lousada, Esq., Peak House, Sidmouth; 3rd, Mr. D. Price, Gardener to W. Forman, Esq., Penydarren House, Merthyr Tydvil; 3rd, Mr. Temple, Gardener to the Dowlais Iron Company, Merthyr Tydvil; 4th, Mr. W. Davies.

GRAPES (Single Dishes, each containing three bunches; Black Hamburgh).—1st, Mr. T. Frost; 2nd, Mr. G. Fleming, Gardener to His Grace the Duke of Sutherland, Trentham; 3rd, Mr. W. Hill, Gardener to R. Sneyd, Esq., F.H.S.; 3rd, Mr. Dods; 4th, Mr. Tillyard; 4th, Mr. Thomson, Gardener to Mrs. Dixon, Stanstead Park; 4th, Mr. J. Fleming, Gardener to His Grace the Duke of Sutherland, Cliveden.

OTHER BLACK KINDS OF GRAPES.—1st, Mr. W. Hill.

MUSCAT GRAPES.—2nd, Mr. J. Tegg; 3rd, Mr. T. Frost.

OTHER WHITE KINDS OF GRAPES.—1st, Mr. Busby, Gardener to J. Crawley, Esq., F.H.S.; 2nd, Mr. Bousie, Gardener to the Right Hon. H. Labouchere, Stoke Park; 2nd, Mr. G. Fleming, Trentham; 3rd, Mr. Hutt, Gardener to Miss Burdett Coutts, Highgate.

VINES IN POTS (in threes).—1st, Mr. Ivison; 1st, Mr. W. Forsyth, Gardener to Baron Rothschild, Gunnersbury Park; 2nd, Mr. Risley, Gardener to W. Fane De Salis, Esq., Dawley Court, Uxbridge; 3rd, Mr. C. Hutt, Gardener to Miss Burdett Coutts, Highgate.

MELONS (green or white-fleshed).—1st, Mr. Peter Boreham, Gardener to Sir Fitzroy Kelly, M.P.; 2nd, Mr. T. Frost; 3rd, Mr. J. Tegg; 3rd, Mr. G. Fleming, Trentham.

MELONS (scarlet-fleshed).—2nd, Mr. Munro, Gardener to Mrs. Oddie, Colney House, St. Alban's.

FIGS (in sixes).—1st, Mr. Ivison; 3rd, Mr. C. Hutt.

EIGHT FRUIT TREES IN POTS (Nurserymen).—1st, Messrs. E. Lane & Sons, Nurserymen, Great Berkhamstead.

PEACHES (in single dishes).—1st, Mr. W. Hill, Royal George; 2nd, Mr. H. Constantine, Gardener to C. Mills, Esq., Hillingdon Court, Royal George; 2nd, Mr. Fleming, Trentham, Royal George.

NECTARINES (in single dishes).—1st, Mr. Busby, Gardener to J. Crawley, Esq., F.H.S., Stockwood Park, Violette Hâtive; 2nd, Mr. G. Fleming, Trentham, Violette Hâtive and Elruge; 3rd, Mr. W. Hill, Violette Hâtive.

BLACK CHERRIES.—1st, Mr. G. Fleming, Trentham; 2nd, Mr. J. Fleming, Cliveden, Black Circassian; 3rd, Mr. Shuter, Heaton Park, Manchester, May Duke.

STRAWBERRIES (in single dishes).—1st, Mr. R. Smith, Market Gardener, Twickenham, British Queen; 2nd, Mr. Dods, British Queen; 3rd, Mr. W. Dunsford, Chingford, Essex, British Queen; 3rd, Mr. A. Ingram, British Queen; 4th, Mr. J. Frost, British Queen; 5th, Mr. Watson, Alice Maude.

MISCELLANEOUS.—Extra Prize—£1, Messrs. Spary and Campbell, Brighton; 10s., Mr. J. Fleming, Cliveden, Raspberries, 10s., Mr. Ivison, a dish of a quart; 10s., Mr. T. Williams, Gardener to C. B. Warner, Esq., F.H.S., for a dish of Oranges.

Section III.—VEGETABLES.

CABBAGES (in threes).—1st, Mr. J. B. Whiting, Gardener to H. T. Hope, Esq., F.H.S.; 2nd, Mr. Tillyard; 3rd, Mr. Carson.

CAULIFLOWERS (in threes).—1st, Mr. S. Snow, Gardener to the Earl de Grey, Wrest Park; 2nd, Mr. Shrimpton, Gardener to A. Doxat, Esq., Putney Heath.

WHITE COS LETTUCE (in threes).—1st, Mr. S. Snow, Gardener to the Earl de Grey; 2nd, Mr. Shrimpton, Gardener to A. Doxat, Esq., Putney Heath; 3rd, Mr. Alfred George, Gardener to William Short, Esq., Barnes.

CABBAGE LETTUCES (in threes).—1st, Mr. Snow, Gardener to the Earl de Grey, Wrest Park.

KIDNEY BEANS (100).—1st, Mr. George Munro, Market Gardener, Barnet.

EARLY PEAS (in pod).—1st, Mr. J. B. Whiting, Gardener to H. T. Hope, Esq., F.H.S.; 2nd, Mr. Bye, Gardener to S. Wintle, Esq., F.H.S.; 3rd, Mr. Tillyard, Gardener to Viscount Eversley, F.H.S.

ASPARAGUS (Fifty heads, not exceeding eight inches in length).—1st, Mrs. Johnstone, Covent Garden; 2nd, Mr. S. Snow, Gardener to the Earl de Grey; 3rd, Mr. Beer, Gardener to Captain Smart, R.N., Chiswick Mall.

RHUBARB.—1st, Mr. Roberts, Willesden. 2nd, Mr. J. B. Whiting, Gardener to H. T. Hope, Esq.

POTATOES (forced, not less than three pounds, Kidneys).—1st, Mr. Bailey, Gardener to G. Harcourt, Esq., M.P., F.H.S.; 2nd, Mr. J. B. Whiting; 3rd, Mr. Snow.

POTATOES (Rounds).—1st, M. J. B. Whiting; 2nd, Mr. Snow; 3rd, Mr. Carson.

CARROTS.—1st, Mr. J. B. Whiting; 2nd, Mr. Snow.

TURNIPS.—1st, Mr. A. Ingram, Gardener to J. J. Blandy, Esq., F.H.S.; 2nd, Mr. J. B. Whiting.

BRACES OF CUCUMBERS.—1st, Mr. George Munro, Market Gardener, Barnet; 2nd, Mr. T. Frost; 3rd, Mr. Munro, Gardener to Mrs. Oddie, Colney House, St. Alban's.

MUSHROOMS.—1st, Mr. J. A. Watson, Market Gardener, Ealing; 2nd, Mr. Munro, Market Gardener, Barnet; 3rd, Mr. Tillyard.

SALAD (the best and most varied).—1st, Mr. J. B. Whiting.

WEEKLY CALENDAR.

JUNE 16—22, 1857.			WEATHER NEAR LONDON IN 1856.					Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
D M	D W		Barometer.	Thermo.	Wind.	Rain in Inches.							
16	TU	Frog Flower (Satyrium).	30.143—30.022	74—44	S.W.	—	44 a. 3	17 a. 8	0 31	24	0 19	167	
17	W	Twayblades, many (Ophrys).	29.921—29.850	74—42	S.W.	01	44	17	0 45	25	0 32	168	
18	TH	Marsh Helleborine.	29.905—29.785	75—45	W.	12	44	17	1 0	26	0 45	169	
19	F	Duckmeats (Lemna).	29.623—29.493	62—49	S.	08	44	18	1 20	27	0 58	170	
20	S	QUEEN VICTORIA ACCESSION.	29.941—29.533	67—40	S.W.	16	44	18	1 48	28	1 11	171	
21	SUN	2 SUN. APT. TRIN., Q. VIC. PR.	30.053—29.982	68—54	S.W.	08	45	18	sets.	☺	1 25	172	
22	M	Matweed (Nardus stricta).	29.968—29.936	68—50	N.W.	—	45	19	9 a 42	1	1 38	173	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 72.2°, and 49.8°, respectively. The greatest heat, 93°, occurred on the 19th, in 1846; and the lowest cold, 30°, on the 20th, in 1855. During the period 104 days were fine, and on 92 rain fell.

USEFUL GARDEN GRASSES.

LO'LIIUM PERE'NNE TE'NUE.

(SLENDER-LEAVED PERENNIAL RYE GRASS.)



No Grass can be much worse for lawns than the common Rye Grass, *Lolium perenne*; but this variety of that species, if grown on well-drained and well-managed lawns, is one of the best of Grasses for the purpose. The common Rye Grass is coarse and tufty, but this variety is fine in its herbage, and under the discipline of the scythe and roller forms a soft, close turf.

Roots few, fibrous. Stems several, less than a foot high, round, smooth, stiff, almost without leaves, the joints purplish, swollen, the lowermost being bent. Leaves few in number, dark green, very narrow, pointed, flat, smooth, and streaked. Leaf-sheaths flattened, streaked, smooth. Stipules short, entire, acutely eared at each side. Flower-head a slender spike, nearly upright; central stalk smooth. Spikelets longer than the

calyx, numerous, alternate, distant, erect, spear-head shaped, few-flowered. Outer valve of the *corolla* narrow spear-head shaped, keeled, pointed, awnless. *Styles* very short. *Seed* line-shaped, very small, only half as long as that of the common *Lolium perenne*, the furrow is broader on the flattened side, and the convex side is rounder. Its small size and greater plumpness readily distinguish it.

It belongs to the Triandria Digynia class and order of Linnaeus.

Besides the characteristics already mentioned we may observe that this is also rendered valuable as a lawn Grass by being hardy, green early, continuing in verdure during the winter, and really thriving well on any but a wet soil.

THE May Meeting of the ENTOMOLOGICAL SOCIETY was very fully attended, the chair being occupied by the President, W. Wilson Saunders, Esq., F.R.S., Treasurer of the Horticultural Society, &c. Amongst the visitors were the African traveller, Major Vardon, together with Herr Dohrn, the President of the Entomological Society of Stettin, and Dr. Hagen, one of the most celebrated entomologists of Germany.

Fine specimens of the Glory of Kent Moth (*Endromis versicolor*) were sent by Mr. Foxcroft from Scotland. Others, also, were exhibited from Tillgate Forest, Sussex.

Mr. Samuel Stevens produced specimens of *Eucheirus longimanus*, one of the most extraordinary species of Lamellicorn Beetles, from the Eastern Archipelago; also some Chinese insects which had been painted by the natives for the purpose of deception. Also, a fine series of varieties of one of the Pieridæ, sent by Mr. Wallace from different islands in the Indian Ocean, remarkable for their local variations. He also exhibited *Heterius quadratus*, a very rare British Beetle, found in the nests of the Ant, *Formica fresca*, and *Notodonta Carmelita*, reared from the larva.

A great number of rare and new British species of Coleoptera were exhibited by Mr. Wollaston, Dr. Power, and other members, including *Chlænus Schranckii*, from Brighton; *Myrmichixenus vaparariorum*, taken at Forest Hill under a Cucumber frame; *Sunius filiformis*, from Brighton; *Drypta emarginata*, an extensive series, from the neighbourhood of Gosport; *Amara rufo-cincta*; *Nitidula neglecta*; *Trogophlaeus scrobiculatus*,

taken on the Surrey side of the Hammersmith Suspension Bridge; *Meloe brevicollis*, near Plymouth; *Chlanius nigricornis*, variety; *Scopæus*, two species; *Euryuca acuminata*; and *Tropidares sepicola*, taken by Mr. Plant.

Mr. Dillon Croker presented a case of Indian Locusts; also a very elegant Musquito Flapper from Constantinople. The President stated that similar instruments were in use both in India and the United States for the same purpose.

Mr. Robinson exhibited a drawing of the larva of *Polyommatus Artaxerxes*.

Mr. Westwood exhibited a new species of Flea of gigantic size, being at least twenty times the size of the common species, and which he proposed to name *Pulex imperator*. He had received a single specimen from Mr. Bold, which had been found dead in a bed at Gateshead. He also exhibited the dead body of a Sphinx, apparently that of *Sphinx Atropos*, which he had recently found partially imbedded in a honey comb taken out of a hive, the inhabitants of which had gradually died off during the winter and spring, although there was a large supply of honey. The queen had also disappeared; but whether the presence of this giant Moth (which had evidently been killed by the bees, and then partially imbedded with wax) had induced the queen to leave the hive there was no means of determining.

Mr. Trimen exhibited a very remarkable tissue of considerable extent found inside the hollow trunk of a tree in South America, and apparently the work of some species of Caterpillar. The texture exhibited a great number of parallel lines, and on examination with a microscope its structure agreed with that of the cocoons of various Moths.

Major Vardon exhibited several very curious insects brought from central Africa by Dr. Livingston. One of these, called *Tampan* by the natives, is a species of Mite of considerable size, which eats its way into the flesh between the toes of the natives, and sucks their blood, at the same time instilling a poison, the effects of which gradually ascend the legs till they affect the bowels, producing vomiting and purging, with fever. Also, several larvæ of a Beetle which, on being crushed, emits a poisonous fluid, into which the Bushmen dip their arrows. Also, a large and very singular Cimicidæous insect belonging to the genus *Phyllomorpha*, and the larva of another Coleopterous insect which buries its head in the sand, leaving exposed its forked tail, with which it seizes any unlucky insect which may come near it, or be attracted by its movements.

Mr. Shepherd exhibited the rare Moth, *Mixodia Hawkerana*, reared from the Sea Spurge.

Mr. Ianson made some further remarks in opposition to Mr. Smith's observations relative to his paper on the nomenclature of a species of *Bledius*.

Mr. Westwood also opposed Mr. Ianson's statements.

A paper by Mr. Newman was read on the sterility of the females of the autumnal broods of double-brooded

Lepidoptera, the author asserting that in such cases their abdomens are nothing more than a hollow cylinder, destitute of eggs or any rudiments of the ovaries.

Mr. Grant read some notes on the entomology of Canada, and Mr. Douglas the translation of a memoir on the transformations of *Trachys pygmæa* from *Guerin's Revue Zoologique*.

THE CHISWICK FLOWER SHOW.—JUNE 3.

(Continued from page 158.)

Mr. BYE, gardener to G. S. Wintle, Esq., Hucclecote, Gloucestershire, sent two collections of remarkably variegated and fine-leaved plants for such a distance from London, with six *Anæctochilids*. In these the old *Sansevieria* was called a *Bromelia*, and the *Elaeodendron pertusum* a *Scindopsis*. His *Canna discolor* was the finest plant of it that ever was exhibited.

Mr. Cutbush, of Barnet, followed with fresh, sizeable specimens of the same stamp. His *Begonia picta* has been referred lately by Sir W. Hooker to *B. Griffithii*. The true *picta* is a very different plant, which I described from the Crystal Palace in Mr. Jackson's collection.

Next to these stood a fine collection of well-grown Ferns from the Messrs. Jackson, beginning with a huge plant of *Blechnum Corcovadense*, *Angiopteris evetica*, *Gymnogramma pulchella*, *Dictyoglossum crinitum*, *Asplenium Balangerii*, *Sagenia alata*, with others quite as good.

Mr. Veitch followed with another grove, a grove of Ferns, with the *Dicksonia antarctica* and *Cibotium Schiedei* at the back, *Thyrsopteris elegans* and *Gleichenia microphylla* matching with *Platynerium grande*. Between them on the second stage and in front *Platynerium alcicorne* and *biforme*, new this season, with *Todea Fraseri*, *Balanium culcitum*, a new *Davallia*, and the newish powdered *Gymnogramma argyrostigma* from Peru. Then splendid plants of *Anæctochilids* from the same, and on to them a stand-up fight in Ferns from Mr. Parker. Here stood the finest plant in England of *Gleichenia flabellata*, the Fern which made the greatest sensation at the Crystal Palace, matched with *Cyathea excelsa* and *Cibotium Schiedei*—three most splendid Ferns to back any collection of them. *Cheilanthes picta*, var. *Ellisiana*, had a fine soft, silvery tinge; *Davallia tenuifolia*, another elegant Fern; *Dicksonia*, *Cyathea*, *Pteris*, *Platynerium*, and others, with a fine plant of the good old *Cheilanthes lendigera*.

Mr. Linden, of Brussels, had a collection of very rare plants, which finished the circuit of the conservatory. One called *Cyanophyllum magnificum* had a truly magnificent leaf of Melastomad formation; *Bæmeria argentea*, a broad-leaved, soft-wooded tree or shrub; and two dwarf *Marantas*, called *fasciata* and *pulchella*.

Outside among the tents I missed some collections which were particularly good at the Crystal Palace. The first was Mr. Colyer's plants, the first in England of the largest size. His *Pimelea spectabilis* is now as big as the top of the monument, and as a monument of skill it was sunk in the very centre of the Palace, with a row of exquisitables round it. The Fuchsias, the Hippeastrums, and some Pelargoniums were also missed.

Mr. Dods, gardener to Sir J. Cathcart, carried the grand prize for fifteen stove and greenhouse plants against two of the best plant growers in England, the neighbours and neighbourly Mr. Green and Mr. Carson, proving that "blood" is as good as money to make the mare go. His blue *Leschenaultia* was the most difficult plant to manage in his whole collection, and it was in grand style, as were the rest before he could beat such

competitors. The rest of the stove and greenhouse plants and the Azaleas are just one year older since I described them last, only one of them, a beautiful *Erica Bergiana*, seemed to be off, or going off, from the troubles of this world.

AZALEAS.—*Coronata* is still my favourite Azalea; then *Criterion*, in the way of *Exquisita*, and two highly-coloured ones, both in Mr. Carson's lot, *Bella* and *Apollo*, crimson scarlet and orange scarlet. These two and *Coronata* are the three most distinct colours in all the Azaleas which have been exhibited.

There were two collections of tall *Cacti*, the same as at the Crystal Palace; but as those who are interested in the names in collections will find them all in our summer reports since 1850, and more particularly since 1852, it seems waste of space to repeat them.

Mr. Salter, of the Versailles Nursery, Hammersmith, sent a collection of *hardy variegated plants*, the most useful of all the variegated plants after all, because everybody can have them out in the beds and borders. The newest to me of these was *Vinea major reticulata*, the network of the veining being in purple and gold; *Aegopodium Podogravia*, *Spiraea ulmaria*, *Funkia undulata* and *albo marginata*, *Tussilago*, *Dactylis glomerata*, *Apium graveolens*, *Centaurea candidissima*, the best of the silver-frosted plants; Strawberry, Balm, and Salvias of different kinds, and many others, all variegated, and all very good and popular, and deservedly so.

The Roses and Rhododendrons and some of the Pelargoniums were arranged in circular beds, with raised grass edges as at the Regent's Park, with a row of standard Azaleas and other specimen plants placed all round the tent, which had a very good effect. Although the Messrs. Standish and Noble have dissolved partnership they were here placed side by side in one of these circular beds of most beautiful Rhododendron seedlings of their own raising, and the Messrs. Jacksons' collection of foreign Rhododendrons stood opposite them, with two of *Dalhousie* in bloom, and others the same as at the Crystal Palace.

ROSES.—Mr. Lane, as was anticipated, took the first natural leap with Roses, having jumped into Mr. Paul's Crystal Palace boots at one bound, and Mr. Rowland also kept the foreground among amateurs. The Roses were never better, and never so well pitched before as on these beds. There was nothing new among them; indeed, Roses would need to be five or six years old before they could come to such a size, and by that time they could not be new.

PELARGONIUMS and Fancies were not so numerous as at the Crystal Palace; but there was more variety in them. Mr. Turner's bed was most splendid. *Sanspareil*, spotted; *Lord Raglan*, scarlet; *Una*, white; *Rosamond*, *Governor-General*, *Basilisk*, and *Esther* could not be selected for variety; but the novelty and greatest variety were in his collection of French Pelargoniums. One called *Eugène Duval*, a light purple, is quite a new style of *Diadematum*. O for a hybrid perpetual Geranium of this *Eugène* to make a bed in the Experimental! But we are coming round that way, and my head for it if, in a few more years, we do not cast our present races to the moles and bats, as we have done the Moss and Cabbage Roses, and have nothing but hybrid perpetual Geraniums which will last nine months in the year, and force and bed into the bargain. Dennis's *Alma* and Cutbush's *Blanchefleur* are the fountains and foundation of the coming race. Mr. Kinghorn had the two beautiful new seedlings I mentioned last autumn, *Rose Queen*, after the manner of *Lucia rosea*; and *Lizzy*, after *Boule de Neige* and *Blushing Bride*.

In the Fancy Pelargoniums one called *Fornarina* (Henderson) was the most out of the common way of them all. Of white Pelargoniums *Gem of the West* is very good, also *Hermione*; and *Vesper* is the most

curious. Were it not that I know to the contrary I should say that our *Vesper* and *Sanspareil* gave the cue to the French for making the new spotted race, for which the world is all but daft just now.

The Messrs. Fraser are pushing very closely on Mr. Turner's Pelargonium heels. Their *Magnificent*, *Majestic*, *Rosa Portia*, and *Zeno* remind one of their former strength in battling and winning battles against Mrs. Lawrence.

Mr. Barter, gardener to Mr. Lennox, had a small collection of variegated new kinds of bedding, and Mr. Salter had a collection of the fancy, *Pansies* in cut flowers. These are the right kinds of Pansies for the flower garden, the pot Pansies being too fat and greasy-like to look well in beds. We owe a heavy debt to Mr. Salter for having had the courage and good sense to face the tide of the circle of our florists in this class, which are as Skye terriers against King Charles's, whose very grim and grisly ugliness is their absolute beauty. If the *nixus* of our florists was applied to improving the dog races the *tendency* would run round and round till all the curs, lurchers, colly dogs and all were converted into the Italian greyhound, and no other dog or dog-gesses would or could we get to buy or breed from in a few more years, unless some Salter should rise to stop the evil, &c., and so it was in Pansies. But if Sir Joseph Paxton is as much in earnest about spring flowers, and other flowers equally neglected, as "our own" correspondents, depend upon it our flower-beds will not want for posies or fancy races of plants.

The greatest rage just now is for Nosegay and Hybrid Perpetual Geraniums. Mr. Ferguson, of Stowe, has a wonderful fancy for them, and a wonderfully good memory to send one flower of all the kinds he sells in order to be classified; and there are other firms with no less wonderful memories about spotted French Geraniums, French Phloxes, and French fashions, for all of which I am made responsible to the curator of the Experimental Garden, and for the empty spaces which were left for the classifications.

Mr. Edmunds, who exhibited last spring the finest double China Primroses that ever were seen, and who is gardener to the Duke of Devonshire—the best of all dukes, for allowing his beautiful gardens at Chiswick to be seen on the Chiswick Show days—I say this Mr. Edmunds has stolen a march on us all. His flower garden was more full on the 1st of June than nine-tenths of the best gardens in the country will be on the 1st of July. His arrangements are also a stolen march since this time three years, and the grand secret is in his keeping his old Geraniums, and in making early autumn cuttings of those of which he has no old plants. He has planted a bed of the *Marquis de la Ferte* Petunia, the improved *Shrubland Rose*, and we shall soon know on the best authority which is the better one of the two, or if they are better or worse than *Countess Ellesmere*, the second improvement of the *Shrubland Rose*. Both the Horticultural and the gardens at Chiswick House were in first-rate style of look and keeping. D. BEATON.

QUERIES AND ANSWERS.

THUNBERGIA AURANTIACA FOR BEDDING.

"Will you kindly tell me whether I may trust to *Thunbergia* to cover two small beds in a flower garden? I have a good many very healthy-looking seedlings of *Thunbergia aurantiaca*. They have been raised on a slight hotbed, and are now about five or six inches high, and seem to be ready to plant out. If it will answer well to peg them down to cover the small beds, at what distance from each other should they be planted? and should they be pegged close to the ground, or would it be better to put small branches for them to creep over?"—A.

[The answer to this depends on a fact which is not supplied. Thunbergias will not do at the north or south poles, nor up to certain distances from those regions; but in the climate of London and on to the Land's End they would make most beautiful flower-beds, and if the first stems are fastened like Verbenas it will be enough; the rest is like managing Robinson's *Defiance* Verbena, and nothing more or less. It is always best to plant *trailing* plants thickly at first, but cut according to the cloth. A foot apart would not be too much; and a thin layer of moss under them, and to be often watered slightly to keep up a dampness among the shoots for and against the red spider, would be better than laying them on sticks. If you could plant them where the sun could not reach from ten in the morning to four in the afternoon you would have them "as never was seen."]

THREE SELECT PELARGONIUMS.

"I want say three sorts of contrasting colours, good trusses, large flowers, and last, but not least, free bloomers; and if you would also kindly inform me as to the best shape to begin growing them, whether on one stem or more, and a few such hints as you may think I shall require as a young beginner, you will confer a great favour on—A SUBSCRIBER."

[*Sanspareil* is one of the very best Pelargoniums for you—a light ground colour, with large dark blotches in all the petals, large trusses, and blooms as freely as a Tom Thumb; it will also save you from dealing in the new French race, as it is in that style, with the sanction of the English florist. *Governor-General* is equally applicable in the high scarlet style and dark upper blotches. *Carlos* will give you the best representative of a true English florist Pelargonium; and you ought to have *Topsy* for the immense size of the dark back petals. The fashion, at present, in the shape is to have them as low as possible, and as wide across as a dining-table. Buy them in bloom, and after blooming cut the young plants down to five or six inches, and keep only five of the new shoots at equal distances; when these are four or five inches long stop them, and they will divide into eight, nine, or ten shoots; when these are a few inches long begin to train them by drawing them to the sides, and fasten them to slender sticks, and you will soon learn all about them.]

TAN FOR PIT-HEATING.

"For the purpose of striking cuttings, &c., I had a brick pit built in the corner of a greenhouse, three feet six inches high and four feet square; this was filled with new tan, two cart loads; at the expiration of two months it had not heated in the slightest degree. I should state that the tan appeared very wet. I have now had it turned out of the pit and placed on the floor of the greenhouse; but, unless on the surface, it does not appear to dry or to heat."—A CONSTANT READER.

[A few weeks back you would find the cause explained why tan so wet would not heat by Mr. Fish. Air and its oxygen are not only the great life supporters, but the great destroyers of all animated existence; in other words, the heat, which is the product of fermentation or decomposition, cannot be produced without air. If your tan is so wet air cannot get in sufficiently to support the combustion of fermentation so as to give you heat. If too dry too much air is admitted, and moisture is also essential to the process. If you had spread your tan out of doors thinly in these hot days, and thrown it under cover at night, it would soon have given you heat enough if not already too much reduced. If you have little means of drying always choose your carting-day from the tan-yard after dry weather. Very likely, if you had placed your tan in an open shed for eight days, it would have heated sufficiently. After you jammed it into the pit no air could act except on the surface. Much of the secret of good lasting hotbeds is just to have them so open and so close, so dry and so wet, as will maintain a constant gradual decomposition. If either too close, or too open, or too wet, or too dry, the decomposing processes are arrested, and there is no heat produced.]

CULTURE OF LILY OF THE VALLEY IN POTS.— TREATMENT OF AZALEAS DONE FLOWERING.

"A SUBSCRIBER" will feel exceedingly obliged by some information as to the culture of the Lily of the Valley in pots to insure blooming. Also the treatment of the Azalea after flowering to insure a good head of bloom."

[Mr. Fish and others have given the minutiae of both matters frequently of late. For the *Lily of the Valley* take up your roots when in a dormant state, or when the buds are moving, and pack as many as you can in six or eight-inch pots in light, rich soil, and set them in a cool, sheltered place, or where there is only a little heat, until they begin to move, when you may force them as you like. Mr. Frazer, of Luton Hoo, presses each bud of the plants between his thumb and finger, and selects only those that are plump and firm, and thus has hardly ever a root that does not produce some flowers.

Clear the *Azaleas* of all old flowers; syringe them well. If a few shoots start before the rest stop them back, that all may have a fair start, and keep the plants closer and warmer than the general treatment given to a greenhouse, so as to encourage them to make their wood. When the shoots have grown two or three inches give them more light and air, and full exposure in autumn, housing by the middle of October.]

TREATMENT OF BEES IN ONE OF NEIGHBOUR'S HIVES.

"I live on the borders of Denbighshire and Shropshire. I have among others one of Neighbour's bee-hives, capable of receiving three glasses as supers. Early in May the hive showed symptoms of swarming. I immediately placed one of the glasses, but that not much improving matters, I placed the other two, all of which were at once filled with bees, in which they worked well; and, having filled each glass with comb and honey about two-thirds full, they suddenly, on the 28th of the same month, threw out a very large swarm, which I was unable to prevent, they only giving an hour or two's notice. The glasses were, of course, very much emptied of bees.

"I immediately withdrew two of the glasses so as to concentrate the now feeble working powers of the bees to the remaining one, to which they took very well, and I have now restored one of the other glasses to-day (June 2nd) in the state I took it from them on the 28th ultimo.

"Having thus explained matters, I should be much obliged if you would tell me whether I ought to have prevented their swarming, and how; and whether in my after course I behaved rightly, and whether I may expect to have all my three glasses of that hive filled this season.

"I observe that the new swarm have already nearly filled their hive with comb.

"I have also a large box hive (evidently too large, being upwards of ten inches high), which has contained bees since 1855, and they have never shown a symptom of swarming since that time, so I have had no profit. They appear full, but evidently not too full for their comfort. I have put on a super to try them, which they do not seem to care for, though it has a guide comb. What would you recommend me to do with them?"—BEE AMATEUR.

[Your treatment of the stock appears to have been judicious. We are not aware that such a hive as you allude to will in all seasons preclude swarming, nor, in truth, do we think it always desirable to interfere too much with the natural habits of bees. You are now put in possession of a young and flourishing colony, likely to be of considerable value in the autumn, whether retained as a stock or deprived of its honey. As regards the parent stock, much, of course, must depend upon season and local circumstances; but from your description it appears likely to recover, by new births, its population, and you may perhaps yet take from it one or two good glasses of honey, or even a third, as you say they are each already "two-thirds full of comb and honey." Your other box is too large either for utility or profit, unless in some unusually fine locality. Its capacity will disincline the bees from throwing off swarms, whilst, for the same reason, they will be indisposed to occupy any kind of supers

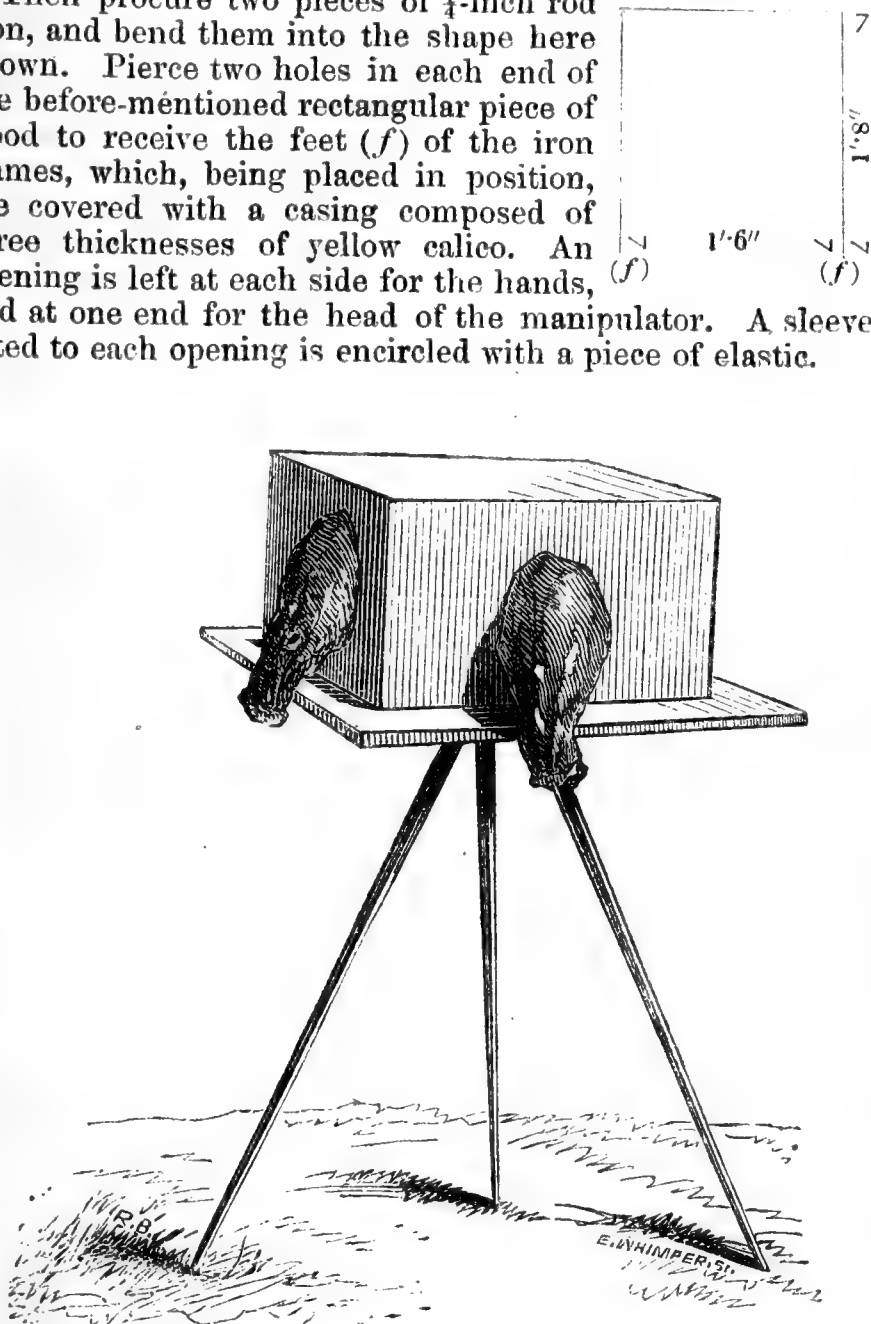
from which you might hope to derive benefit. Perhaps you had better take possession, in the autumn, of its contents, which will probably be valuable, and by means of fumigation unite the bees to some other weaker family.]

PORTABLE DARK CHAMBER FOR PHOTOGRAPHING.

"T. Y. K." will feel obliged by your informing him how to construct a portable dark place for photography, in order that he may take it with him when he goes from home."

[Construct a tripod stand similar to that described in THE COTTAGE GARDENER for April 26th, but with stouter legs, and for the top a rectangular piece of wood 2'2" x 1'8".

Then procure two pieces of $\frac{1}{4}$ -inch rod iron, and bend them into the shape here shown. Pierce two holes in each end of the before-mentioned rectangular piece of wood to receive the feet (f) of the iron frames, which, being placed in position, are covered with a casing composed of three thicknesses of yellow calico. An opening is left at each side for the hands, and at one end for the head of the manipulator. A sleeve fitted to each opening is encircled with a piece of elastic.



The whole apparatus is here represented.—E. A. COTLAND.]

BEEES IN A NUTT'S HIVE.

"On Thursday last, following your kind directions, in answer to my inquiries appearing in No. 450, I safely hived a large swarm of bees in Nutt's centre box, and, although the weather since has been partially unfavourable, all seems to be going on favourably. Can you inform me what is about the proper temperature for comb building? The thermometer therein has since ranged from 70° to 85°, averaging about 75° to 78°. The situation is completely shaded after about twelve o'clock by a young Elm tree. I have one of the common cottage hives, bought the spring before last for stock, and have had early swarms last year and this therefrom. On examining it last night I found it very heavy, say 40 lbs. to 50 lbs., and the straw very rotten, the hive being old when I bought it. Would you advise the fumigation of the bees, and their removal to another worker's bellglasses (I have had a 10 lb. bellglass this season filled in twenty-four days from May 9th: is not that pretty good?); or what course would be best, as I am afraid that

the hive will be hardly tenatable by next season, and is now, I am afraid, infested with vermin? It is protected from the weather on all sides but the front. I find that I can have a hive made here to answer the same purpose, and similar in all important respects to Neighbour's improved cottage hive, price £1 15s., for about 10s., or less than that, and with only one window for about 5s. to 6s., including bottom board. Why will these makers drive all apiarians wishing to keep any number of bees, and with fathomable pockets, to the old system? Is it necessary to Nutt's system that there should be two side boxes, as I think that by simplifying, the present price, £6 to £7, might be greatly reduced?"—APIARIAN.

[As regards temperature in your newly-hived colony, that, of course, is much influenced by the weather. As the summer and population advance it will probably range somewhat higher than your present figures indicate. If your common straw hive is really in the decayed condition you state it may be hardly worth preserving to another season; but we have often had occasion to protest against the removal of old combs into new hives. It is better to fumigate the bees in September, and add them to some stock requiring to be strengthened by additional numbers, appropriating the store of honey, which appears to be a pretty good one. We cannot undertake to criticise the prices charged for bee-hives; that is an affair between the buyer and seller. Expensive hives with elaborate appendages must be paid for, and you have adopted Nutt's, the most costly of any. Your suggestion as to reducing the number of boxes would amount to an abandonment of the theory on which these hives profess to be founded. We are not partial to collateral hives generally; but they may be made with two boxes only, in which case they follow the plan laid down by White. As you have ordered a copy of "The Bee-keeper's Manual" you will therein find a description of this and various other kinds of hives, with some further information respecting glasses, &c., of which you are in need.]

GROWING PINE APPLES WITHOUT TAN OR HOT-WATER PIPES.

"Will you inform me whether I can grow Pine Apples to perfection without the use of tan for bottom heat? I am told I could do so provided I had hot-water pipes; but as I cannot go to that expense I wish to know whether or not the same object can be attained by the use of a common brick flue. If both bottom and top heat can be obtained by the use of a flue I shall feel extremely obliged for a few remarks on the subject. Also, will a fire be continually wanted through the summer to keep up the bottom heat, or only at certain times?"—AN ANXIOUS INQUIRER.

[There can be no doubt that "AN ANXIOUS INQUIRER" may do so, without either resorting to the dreaded hot water or the carting of tan for the purpose, though, before commencing operations, we would advise his getting a rough estimate of what the various modes would cost him, confident that for a pit of any size hot-water pipes, or a hot-water tank on the principles described near the end of Vol. II., would ere long, if not at first, be the most economical. Suppose, for instance, his house or pit was seven or eight feet wide, and a portion of it under the ground level, and some forty or sixty feet in length, then a boiler for about £5, and four times the length of the house of four-inch piping, say about 1s. 2d. per foot, would do the thing most effectually; two of these pipes being for top heat and two for bottom heat, and either used independently of each other, or the two tops made flow-pipes, and the two lower ones under the bed made return-pipes, as practised so successfully by Mr. Fleming at Trentham. The two lower pipes, if rough-chambered over with stones, bricks, and clinkers, would diffuse the heat equally, and pouring water amongst them would give moist heat as desirable, and over these stones there might be sand for plunging in, or, better still, soil in which the plants should be inserted and grown. We have said sand for plunging in; but, whatever the mode of heating, if the plants are to be grown in pots some fermenting material, such as tan or tree leaves, will beat anything else in the way of gravel or earthy matter, as the Pines relish the

ammoniacal and other gases given off by such decomposing vegetable matter.

So much is this the case that some of the most successful growers, who use pipes for bottom heat, and plant out in fibry soil, without any fermenting matter, water with manure water, and place soot water and other strong waters in the evaporating pans of the house—a plan which we find beneficial to many things besides Pines. Though, therefore, we should prefer pipes, and, perhaps, for economy in fuel, so that little or no heat should get out at the chimney, would probably have a flue from the furnace likewise, there is no reason why our correspondent should not be told how to manage in the best manner with a flue alone. It is now many years since we helped to grow good Pines from such a mode of heating. The pits were some seven feet wide, and the front was some two feet above the surface line, with the back about four feet and a half. They must have been pretty deep, as the flue went and returned in an open chamber, into which a person could crawl with some difficulty so as to reach the iron openings for cleaning the flue properly. We forget now exactly how the platform of strong slabs was supported; but, supposing we wished for such an open chamber, we would leave a brick jutting out an inch or so all round at the proposed height of the chamber, say three feet from the bottom of the pit, and on this projecting ledge the ends of the planks or stones might rest, supported farther by a longitudinal bar of iron passing underneath the platform in the centre, supported on small stone or brick pillars. In the centre of each light, back and front, were small wooden funnels about four inches square, opening with their lower end into this chamber, and with their upper end into the atmosphere of the house, that upper end being furnished with a lid to open or shut at pleasure.

The planks, or rather, rough, thick slabs, were not individually very wide, and were placed about two inches apart (for the gardener was well aware that wood was a non-conductor of heat, though very inflammable, and, therefore, he interposed the depth of the chamber, that the flue should not be too near the wood), and that space was well crammed with all sorts of clinkers and angular stones, and then plastered over with roughish concrete. The pits were easily managed, and there was no difficulty in getting plenty of bottom and top heat. When sandy gravel, however, was used as a plunging medium there was some difficulty in keeping the atmosphere moist enough, as the surface, though watered, soon became dry; and we do not recollect that water was often poured in by the side openings so as to get into the chamber, which would have greatly neutralised this tendency to dryness. This dryness was scarcely felt when the pots were plunged in sweet tan or fermenting leaves. They not only retained more moisture, but gave off nourishing exhalations.

So much for the reminiscences of a pit heated by a flue that did answer. Our correspondent, if resolved on a chamber and platform, may find a hint for action. He also has a right to any ideas derived from farther experience; in fact, to know what we should prefer doing if restricted to a flue, and economy in outlay a great matter of consideration. Allowing, then, an average of four feet from the surface of the bed to the glass roof, and from fifteen to eighteen inches of a plunging in, or an earth for growing in medium, and a foot or so from that to the top of the flue, we would regulate the depth of the pit accordingly. If the pit was short, say thirty feet, one length of the flue would be sufficient, the chimney being at the opposite end. If fifty or sixty feet long it would have to return to the same end as the furnace, so as to equalise the heat. If much longer it would be as well to have a furnace at each end, and no returning. In either case the flue must be substantial, built with brick on bed, and covered with strong tiles, or rather, with paving flags fully two inches and a half thick for more than half its length. If returned the cooler half may be built with brick on edge in the usual way. Around the flue and over it, but chiefly around it to the very outsides, we would place rough boulders, clinkers, &c., as open and loose as possible, yet so as they would keep their position, covering all with rough gravel, and then a surface of finer. When this was going on we would fix strong earthenware pipes in a slanting direction back and front of each light, their lower

ends in the open spaces within nine inches or so of the flue, and their upper ends reposing against the side walls, furnished with wooden plugs to stop or open at pleasure. Through these pipes, some four inches in diameter, we would regulate the top heat, and by pouring clean and manure water down among the stones we would command moist, rich vapour for roots and tops. Provided the flue is thus securely built, and places left for cleaning it thoroughly, there is no reason why it should not succeed as well as a tank or a hot-water pipe. The heat from a close tank or a water-pipe is just as parching as from a flue, but unless the latter is kept clean and built strong there is danger of sulphureous and other destructive gases finding their way through the joints. With good brick-on-bed flues this seldom happens; in fact, in managing such flues we have never known an explosion, and our predecessors as under gardeners, as well as the head gardener, assured me there had been nothing of the kind since either of them had known them. With brick-on-edge we have had Cucumbers and French Beans sacrificed in a few minutes; but then the flues were old and rickety. In greenhouses, or even where only a little forcing was wanted, these brick-on-bed flues would be unsuitable, because they take much time to heat them. In a Pine-stove this objection does not apply, as a continuous heat is required, and none is lost; for though such flues are long in heating, they are also long in cooling. To prevent the cracking and unnecessary wearing of the flues, we advise the fixing of the earthenware pipes as directed, so that when water is poured down none of it touches the flue. The vapour that then rises from the stones will never be perniciously hot. The watering of a flue to produce vapour is one of the relics of barbarism. We lately saw some nice Vines scorched and parboiled by such steaming. In such cases it is better to fix troughs of some sort on the flue, and then the moisture given off will be in proportion to the heat, and there will be little danger of a scorching excess at one period. Even the earthenware pipes might be dispensed with by leaving an open space all round, say two inches wide, by means of boards or slate set on edge, so as to give communication with this stone or clinkered chamber round the flue; but we prefer the pipes, because the top heat, and also the bottom heat, can be more easily regulated.

With such a flue-heated house we should prefer having a piece at one end supplied with tan or leaves above the stone and gravel bed for growing the young small plants in pots; but, as soon as they were well rooted and a good size, we would plant them out in a bed of good fibry loam some fifteen inches deep, mixing pieces of charcoal and hard pieces of fibry turf to keep the whole open, and for richness and vigour depend on clear manure waterings, and pouring drainings from the dunghill, and soot water at times, through the pipes among the stones.

In summer, when the bottom heat is from 80° to 85°, and the top heat in the morning is from 65° to 70°, and rises some 15° in sunshine, fire heat will not be necessary. In dull weather a little fire heat will be advisable. If the bottom heat is rather low and the weather sunny put on a little fire and plug up the pipes. Were we near a coal field we would, in the case of growing tender exotics and forcing, use much more fuel than we do, and give air in proportion. When every shovelful of coal is a consideration we must make the best use we can of the sun in the way of heating, and make a compromise between economy and desirability by shutting up early and lessening the quantity of air.]

EARLY SPRING FLOWERS.—HABIT OF THE ENGLISH TULIP.

"I quite agree with 'A CONSTANT READER,' in yours of May 19th, that our best thanks are due to Mr. Beaton for calling attention to spring flowers. I have long been a cultivator of them, and have this year had my garden filled with beds of most of the flowers named. I would add to the list *Sysirinchium grandiflorum*, purple; *Adonis vernalis*, bright yellow; *Caltha palustris flore pleno*, golden yellow; *Cardamine pratensis flore pleno*, pale lilac. This looks very much like a dwarf Rocket, and is beautiful in April and May.

"I think it would also be well to call attention to some of

the hardy variegated plants for edgings, as it is not every one who has pits for wintering variegated Geraniums, &c. I have now in full flower a bed edged with the variegated variety of the *Ajuga reptans*, and nothing can exceed the beauty of the bright blue against the variegated leaves, and its low habit is quite in its favour as an edging. Another bed is edged with the golden variegated Daisy. I have had it for three years, and find it increases rapidly, and makes a beautiful edge, even after it has done flowering, and contrasts well with lilac and blue.

"Now is the best time for dividing the *Anemone Apennina*, as it has just gone to rest. I do not wonder that the *Tulipa sylvestris* did not flower after being transplanted. Its habit is totally different from the garden Tulip. The bulb shoots out long threads horizontally; at the end of these the young bulbs are formed. They like a shady corner where they are not disturbed, and there will increase and flower for years. Baines, in his 'Flora of Yorkshire,' speaks of it as 'in a field between Henthorne and Sprotborough Broats, on the banks of the river Don, covering a considerable space, but flowering only sparingly.'

"I have a blue, or rather, grey Polyanthus that flowers early and makes a good bed. It comes in well, after Crocuses and Snowdrops, with the double Polyanthus, or to take the place of Hepaticas. Will you kindly inform me whether it is good to cut off the leaves of Hepaticas late in autumn, so that the old leaves may not interfere with the flowers in spring?"—K. W.

[The practice of cutting Hepatica leaves in September answers remarkably well with Mr. Low, of Clapton, who divides and pots them then to bloom under the stages of his heatheries, and to sell as fast as any plants he grows. We saw last February a flower garden of the different kinds thus treated, and looking most capitally.

Our correspondent affords a key to a problem in botany at last. The Florentine Tulip, *Tulipa flore subnutante* of the very old authors, and the English Tulip, *Tulipa sylvestris* of modern authors, would thus appear to be as distinct from one another as the Tulip is from the Lily. The English Tulip makes *surculi*, or shoot roots, for colonising its progeny during its own lifetime. The Florentine and all other Tulips, as far as we know, do no such thing, but die and leave their offspring to dispute for the family hearth, and with a ball the gardener removes the whole family, hearth and all, at any period in the season of growth; or, by placing a mark to indicate the hearth during the growing season, he can put his hands on it at any time of the rest season. Not so our English Tulip, as set forth by "K. W."* This fact kills two birds at one throw. It accounts for the reason why the English Tulip must not be removed in growth, and it determines the specific difference in the nature of our Tulip from that of all others.

Many of our fresh-water botanicals believe they possess *Sisyrinchium grandiflorum*—a most difficult family of bulb-like plants to make out the kinds of—in the shape of an Ixia-like spring flower, with short scapes of pale blue flowers. It is nothing of the sort, however. Our correspondent's plant is very different and quite true, a dark purple, and nearly as big as a Snowdrop, a most valuable spring flower. The variegated Bugle, *Ajuga reptans*, we never saw, and there is a white and a red-flowering kind of it equal strangers to us. *Ajuga pyramidalis* is the greatest weed among luub Grass in the Highlands, but no animal will touch it. *Luub* is the natural meadow there, and is the same as oasis in the desert. *Adonis vernalis* makes a pretty patch in or out of flower, no other plant being then like it in the leaves. *Caltha palustris flore pleno* would seem to want the same cultivation as Water-cresses—yes, sure enough; but Water-cresses are far better, and ten times more wholesome, and free from the eggs of dragon-flies and water-ants—when grown in a good rich bed in the kitchen garden, far away from water and all manner of slops, and so with the double and single Calthas. The double *Cardamine* is one of those lady-like natives which all admire, and is the best food in the world for spring

chickens to keep them in health and good spirits. We have seen the golden variegated Daisy this spring being handed to the ladies in their own carriages at the London nurseries for eighteen pence per "root" in thumb pots. This Daisy must have escaped from the garden of Titania, the queen of the fairies; it is so like a flower from a fairy's garden that one can never mistake it among mortals, and a new golden variegated *Oxalis* is very much like it. The grey Polyanthus is extremely scarce; we never saw but one plant of it. The double dark Polyanthus grows with Mr. Jackson at Kingston as freely as a Cowslip. We have a Polyanthus from seeds this spring as yellow as a Buttercup. It will make an invaluable edging to some of the spring beds.]

THE PISTOL PLANT.—A hothouse plant, *Pilea allitrichoides*, of tender, brittle, and juicy aspect, looking as if good to eat in a cooling salad, is really of so explosive a temperament that it might fairly be called the Pistol plant. When near flowering, and with its buds ready to open, if the plant is either dipped in water or abundantly watered each bud will explode successively, keeping up a mimic Sebastopol bombardment, sending forth a puff of smoke, or of dusty pollen, as its stamens suddenly start forth to take their place and form a cross. It is no novelty; but it is still an amusing toy.—(Sydney Morning Herald.)

A NOTICE OF SOME SPECIES OF RHODODENDRON INHABITING BORNEO.

WHEN Mr. Hugh Low returned from his visit to Borneo he was so obliging as to place in my hands some drawings and dried specimens of certain species of Rhododendron which occur in that island growing upon trees. They are found to be very distinct from all previously known, and in many respects so deserving of notice that it has been thought advisable to prepare the following short memorandum concerning them.

In Mr. Low's account of Sarawak† they are spoken of thus:—

"Perhaps the most gorgeous of the native plants are the various species of the genus Rhododendron, which here assume a peculiar form, being found epiphytal upon the trunks of trees, as in the genera of the tribe Orchidaceæ. This habit, induced probably by the excessive moisture of the climate, is not, however, confined to the Ericaceous plants, but also prevails with the genera *Fagraea*, *Combretum*, and many others, usually terrestrial. The roots of the Rhododendrons, instead of being, as with the species, inhabitants of cold climates, small and fibrous, become large and fleshy, winding round the trunks of the forest trees. The most beautiful one is that which I have named in compliment to Mr. Brooke. Its large heads of flowers are produced in the greatest abundance throughout the year. They must exceed in size that of any known species, frequently being formed of eighteen flowers, which are of all shades, from pale and rich yellow to a rich reddish salmon colour. In the sun the flowers sparkle with a brilliancy resembling that of gold dust.

"Four other species which I discovered are very gorgeous, but of different colours, one being crimson and the other red, and the third a rich tint between these two. Of the fourth I have not yet seen the flowers. Besides the curious nature of the root above noticed, botanists may learn that these species differ from others of the genus in having very small, almost imperceptible calyces, and caudal appendages to the seeds, these last greatly facilitating the attainment of a situation favourable for their growth."—p. 65.

The peculiar habit ascribed to these plants of forming large fleshy stocks, instead of the fine fibrous roots proper to the Azaleas and Rhododendrons at present in cultivation, is also met with in the kindred Cranberries (*Vacciniaceæ*) of South America, among which several *Thibaudias* may be named. The epiphytal character has, indeed, been observed

* This is not a new discovery. Sir W. Hooker, in his *Flora Londinensis*, states, on the authority of the late Mr. Ker, that the bulbs of *Tulipa sylvestris* send out lateral shoots of a considerable length, forming new bulbs at their extremity. Sir J. E. Smith also records the fact, and observes, "Nothing can be more distinct as a species."—ED. C. G.

† *Sarawak; its Inhabitants and Productions*, &c. By Hugh Low, Colonial Secretary at Labuh-an.

among plants still more nearly allied to *Rhododendron*, as in *Anthopterus racemosus* and a species of *Sphyrospermum*, both which grow upon trees in the Peruvian Andes.

The four species now described belong to a supposed genus called *Vireya* by Blume, and distinguished from *Rhododendron* by the seeds being extended at each end into a slender tail-like process. But this circumstance, the only one that is at all peculiar to the Malay *Rhododendrons*, disappears in *Vireya retusa*, whose seeds are shown by Dr. Horsfield's figure of that plant to be in no respect different from those of *Rhododendron arboreum*. In the latter species the seeds are furnished with short, thick hairs at each end; in *Rhododendron campanulatum* they are reduced to mere tubercles; in *Azalea Indica* they wholly disappear; while in *Azalea Pontica* they occur in the form of thick processes connected with a broad wing which surrounds the seed either wholly or in part. Hence we are led to infer that such circumstances are of no generic value, and therefore botanists have universally rejected the genus *Vireya*.



Rhododendron gracile.

1. RHODODENDRON BROOKEANUM. Low.

SP. CHAR. Leaves oblong-lanceolate, acute, perfectly smooth, nearly sessile, without any trace of dotting or marking on the under side. Peduncles smooth. Flowers in loose umbels. Calyx obsolete. Corolla between funnel-shaped and campanulate, five-lobed; the lobes retuse, revolute, nearly as long as the tube. Stamens ten, prominent, with linear converging anthers.

This noble plant not only grows on trees, but, according to one of Mr. Low's memoranda, is occasionally met with "on moss-covered limestone rocks, flowering from November to July."

Another note upon it is the following:—

"I shall never forget the first discovery of this gorgeous plant. It was epiphytal upon a tree which was growing in the water of a creek. The head of flowers was very large, arranged loosely, of the richest golden yellow, resplendent when in the sun. The habit was graceful, the leaves large. The calyx of this and the other Borneo species is so small as to be scarcely perceptible. The roots are large and fleshy, not fibrous as those of the terrestrial *Rhododendrons*. It is the least common of all the genus in the island, and has many varieties, which differ in having larger flowers and leaves, the former of a more or less red colour. Very high and large trees in damp forests are its favourite haunts."

In his *Sarawak* we find it mentioned in the following paragraph:—

"The still river, winding its way amidst the limestone, which is shaded with overhanging trees, is nevertheless very pretty; and the hill opposite to which we now lie rises in a precipice two hundred feet above our heads, its face being covered with climbing plants, and the projections of the rocks covered with Ferns and other plants, among which I observed the bright flowers of the beautiful and new yellow *Rhododendron Brookeanum*, and the elegant fern-like foliage of a large-leaved, stemless Palm."—p. 374.

This species is allied to *Rhododendron Javanicum*, from which it differs in having much larger flowers, and nearly sessile, not long-stalked, leaves, the under side of which is entirely destitute of the rusty specks which characterise the Java plant. Coloured drawings of two varieties are before me,—one yellow, the other rich red.

The *Yellow* is represented with fourteen flowers in a loose cluster, of a rich buff colour, and two inches across the limb. The colour, however, is stated by Mr. Low to be incorrect, and it is probably much too dull.

The *Red* has larger leaves, and only five flowers in a cluster, in colour resembling the *Azalea Indica lateritia*, but richer. They are more than three inches across the limb.

2. RHODODENDRON GRACILE. Low.

SP. CHAR. Leaves lanceolate, very long, drooping, tapering sharply to each end, quite smooth, but indistinctly marked on the under side with dark freckles. Peduncles smooth, much shorter than the flowers. Calyx obsolete. Corolla funnel-shaped, with a tube much longer than the irregular limb, whose lobes are flat, very blunt, and imbricated. Stamens exserted; anthers erect.

"This slender and beautiful *Rhododendron*," says Mr. Low, "is found on rocks at the 'Sirul' mouth of the Sarawak River. It is confined to a space of ground not extending over two hundred yards square, and was never seen in any other place. It grows

luxuriantly upon the sandstone rocks, which are covered with moss and decaying leaves to the height of from four to six feet. The seeds have tails, and, with the exception of its place of growth, it resembles the other Bornean species. It flowers all the year round."

Its leaves are six or seven inches long, and about one inch and a half broad. The flowers are nearly three

inches long, and about two across the limb. They are of a rich fiery red, with a pale violet-coloured throat. The anthers are deep brown. In the drawing before me they are uniformly represented as having one or two of their lobes bent downwards more than the others. This peculiarity is also traceable in the dried specimens.

The accompanying figure is much reduced below the natural size, as will be evident from the measurements given above.

3. RHODODENDRON VERTICILLATUM.

Low.

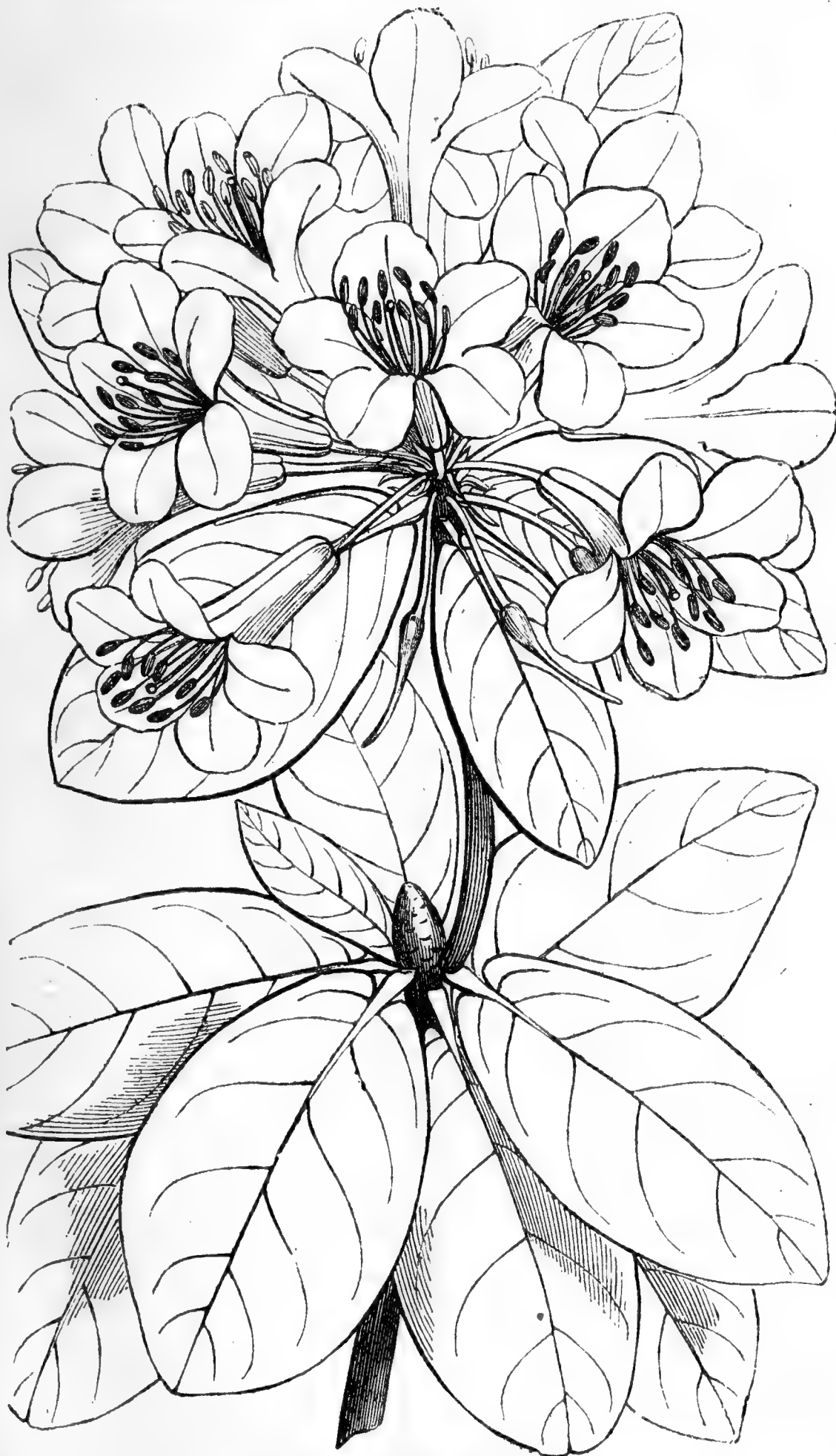
SP. CHAR. Young branches slightly downy. Leaves oblong, obtuse, stalked, heart-shaped at the base, downy on the petiole and midrib, dotted abundantly on the under side, arranged in irregular whorls. Peduncles downy, as long as the flowers. Calyx obsolete. Corolla nearly campanulate, with an erect five-lobed limb. Anthers projecting, erect.

Of this plant I have seen no drawing, and the dried specimens are imperfect. It is, however, perfectly distinct from the other Malay Rhododendrons. Mr. Low has the following note about in his *Journal*, October 14, 1846:—

"Near the top of the mountain (Gunong Penerissen, 4700 feet) I discovered a plant of the smaller-leaved Rhododendron, which, for distinction's sake, I call *R. verticillatum*, in flower. On procuring it, which was done with some difficulty, as it was epiphytal on a tree overhanging the rocky side of the mountain, it had but one head of expanded flowers, which were of a reddish crimson colour, without spots. It was of large size in proportion to the leaves and stems, being ten inches in diameter, and very compact. The leaves are verticillate, many in a whorl, and the wood-buds are closely imbricated with scales, broad at the base, and with recurved points. The roots are long and fleshy, like those of the yellow Rhododendron (*Brookeanum*). It is found on the sides of the Dacrydiums and other trees, which are covered at that height with large and long moss. The atmosphere is very damp, and at night the thermometer stood at 64° F."

The leaves of this plant are in form like those of *Rhododendron campanulatum*, but are entirely free from the rusty down which covers the under side of that species. In its room the surface is thickly studded with minute ferruginous points. They are convex, revolute at the edge, and the largest four inches long by two and a quarter wide. The flowers are between two and three inches long, and about one inch and three quarters across the limb.—(Dr. Lindley, in *Horticultural Society's Journal*.)

(To be continued.)



Rhododendron verticillatum.

SEEDLING PETUNIAS.

I PERFECTLY coincide with Mr. Beaton in his remarks, page 130, as to the effectiveness of these plants in the flower garden, and have used them extensively for some years past, both in beds and also in the borders. Those who have a large space to fill with plants for summer decoration cannot, I am sure, have for that purpose a more useful or more effective plant. No bed or border can possibly look more beautiful if care is taken in the selection of varieties. My practice is to save only from a few of the very best seedlings, and it is astonishing how very much superior they are in every respect to what they were when I

commenced saving the seed eight or ten years ago. Not only are they highly ornamental, but of such easy management that a pinch of seed sown as Mr. Beaton suggests will produce innumerable plants, for which I seldom or never use pots. When large enough to handle I prick them off into shallow boxes on the west Kent pot principle, described by me four or five years since. The soil I use is leaf mould, with a good portion of silver sand. They are hardened by degrees until fit to finally transplant, which is done from box to border with admirable success.—GEORGE FRY, *Manor House, Lee, Kent*.

THE AQUARIUM.

As the aquarium has become a household institution many of our readers may be glad to read the following instructions as to its management, which we collect from a lecture recently delivered at the Royal Institution by Mr. Warrington.

Water, fresh and marine.—The water used for the aquarium should be clean, and taken direct from a river, or from a soft spring, and should not have been purified by means of lime. As regards sea water, it should, if possible, be taken at a distance from the shore, and at the period of high water. If artificial sea water is employed it should be made either from the saline matter obtained by the evaporation of sea water, or by the following formula:—Sulphate of magnesia, $7\frac{1}{2}$ ozs.; sulphate of lime, $2\frac{1}{2}$ ozs.; chloride of sodium, $43\frac{1}{2}$ ozs.; chloride of magnesium, 6 ozs.; chloride of potassium, $1\frac{1}{2}$ oz.; bromide of magnesium, 21 grains; carbonate of lime, 21 grains. These quantities will make ten gallons. The specific gravity of sea water averages about 1.025; and when from evaporation it reaches above this a little rain or distilled should be added, to restore it to the original density.

Vegetation.—The plants best fitted for fresh water are the *Vallisneria spiralis*, the *Myriophyllum*, *Ceratophyllum*, and the *Anacharis*, all of them submersed plants, and fulfilling the purposes required most admirably. From the great supply of food in the aquarium the growth of the *Vallisneria* is very rapid, and it requires, therefore, to be thinned by weeding. This should never be done until late in the spring, and on no account in the autumn, as it leaves the tank with a weakened vegetation at the very time that its healthy functions are most required. The vegetation of the ocean is of a totally different character and composition, being very rich in nitrogenous constituents. There are three distinct coloured growths—the brown or olive, the green, and the red. For the purposes of the aquarium, where shallow water subjects are to be kept, the best variety is the green, as the *Ulvæ*, the *Enteromorpha*, *Vaucheria*, *Cladophora*, &c. These should be in a healthy state, and attached to rock or shingle when introduced. We shall have occasion to notice the *Rhodospiræ* under the head of Light.

Scavengers.—A most important element in establishing and maintaining the permanent balance between the animal and vegetable life, without which no healthy functions can be secured, and the aquarium must become a continued source of trouble, annoyance, and expense. The mollusc which was first employed, the *Limnea stagnalis*, was found to be so voracious as it increased in size, that it had to be replaced by smaller varieties of *limnææ*, by planorbis, and other species of fresh-water snail. The number of these should be adjusted to the quantity of work they are required to perform. In the marine aquarium the common periwinkle fulfils the required duties most efficiently, and is generally pretty active in his movements. The varieties of trochus are also most admirable scavengers; but it must be borne in mind that they are accustomed to a mild temperature, and will not live long in a tank liable to much exposure to cold. The *Nassa reticulata* not only feeds on the decaying matters exposed on the surface of the rockwork and shingle, but burrows below the sand and pebbles with the long proboscis erected in a vertical position, like the trunk of the elephant when crossing a river. But in the ocean there are innumerable scavengers of a totally differing class, as the annelids, chitons, starfish, nudibranch molluscs, &c., thus affording a most beautiful provision for the removal of decaying animal matter, and converting it into food for both fish and man.

Light.—It is most probable that the greater amount of failures with the aquarium have arisen from the want of a proper adjustment of this most important agent, the tendency being generally to afford as much sun's light as possible; but on consideration it will be found that this is an erroneous impression. When the rays of light strike the glassy surface of the water the greater part of them are reflected, and those which permeate are refracted and twisted in various directions by the currents of the water, and where the depth is considerable it would be few rays which would penetrate to the bottom; but let the surface become ruffled by the passing wind, and it is little light

that can be transmitted, and when this same disturbing cause lashes into waves and foam not a ray can pass, and all below must be dark as night. Too much light should therefore be avoided, and the direct action of the sun prevented by means of blinds, stipling, or the like. It is a great desideratum to preserve the growth of the lovely red *Algæ* in all their natural beauty, and prevent their being covered with a parasitic growth of green or brown-coloured plants; this can be effected by modifying the light which illuminates the aquarium by the intervention of a blue medium, either of stained glass, of tinted varnish, coloured blinds, &c. The tint should be that of the deep sea, a blue free from pink, and having a tendency rather to a green hue. This modified light affects also the health of those creatures which are confined to shallow waters, so that a selection of the inhabitants must be made.

Heat.—The proper control of this agent is also most material to the well-being of these tanks, for experience has proved that an increase or diminution of temperature beyond certain limits acts most fatally on many of the creatures usually kept. These limits appear to be from 45 degrees to 75 degrees Fahrenheit. The mean temperature of the ocean is estimated to be about 56 degrees; and this does not vary more than 12 degrees throughout the varying seasons of the year, showing the extreme limits to be from 44 degrees to 68 degrees. Great care should therefore be taken to afford as much protection as possible, by the arrangement of the rockwork, both from the sun's rays by day and the effects of radiation at night, as from the small volume of water contained in the aquarium these effects are rapidly produced.

Food.—As many persons, to whom those interested in these matters have naturally looked for instruction, have decried the idea of feeding, it will be necessary to offer a few remarks on that point. How creatures so voracious as most of the denizens of the water are, both fresh and marine, are to thrive without food, is a question it would be difficult to solve; common sense would say they must gradually decrease in size, and ultimately die from starvation. The food employed should be in accordance with the habits of the fish, &c. For the vegetable and mud feeders, vermicelli, crushed small, with now and then a little animal food, as worms, small shreds of meat, rasped boiled liver, and the like. For the marine creatures, raw meat, dried in the sun and moistened when used, answers very well. Oyster, muscle, cockle, raw fish, shrimps, and the like matters may be employed; these should be cut or pulled into very small pieces, and never more given than they can at once appropriate, and if rejected by one it should be transferred to another, or removed from the tank. In the case of actinia, they require, from their fixed position, that the food should be guided to their tentacles; and if the animal food, of whatever kind, is soaked in a little water, and the water thus impregnated with animal fluids be dropped in moderate quantity into the tank, it will afford food for the small entomostracha and smaller creatures with which the water abounds, and which constitute the food for many of them.—*Athenæum*.

NEW BOOK.

THE MARINE AQUARIUM.*—The taste for aquariums seems unabated, and the better they are known the more extended will the taste become. There is no doubt that the facility with which they are managed, and the plain instructions contained in some excellent manuals on the subject, have had much to do with the popularity which they have acquired. Though not among the earliest in the field, this little treatise of Mr. Stark's has not come too late, and we hail it all the more, apart from its thoroughly clear and practical directions, because we know it to be the production of one who holds a respectable position in science, and who has devoted the greater part of his life to the study of these subjects. We cordially recommend this little book to all who wish to know how to manage the marine aquarium.

* *The Marine Aquarium, Directions for its Preparation and Management.* By R. M. Stark.

BEES REGULATING THE HEAT OF THE HIVE.

THE figures in the body of Mr. Taylor's remarks show that the temperature of the hive in winter has been as low as 34°; this appears to be, however, a rare occurrence—once in two years. Still, where this has taken place in a hive apparently healthily constituted, it is enough to show that 40° are not the limit, more especially as 35° and 37° have also been touched, if not by the same hive, by others. This is still above freezing point, and but for the foot note would rather confirm me in my opinion. This note, however, is clearly against it, and I should esteem it a favour if Mr. Taylor would farther oblige me by informing me on the following points:—

Was this second hive, which showed on December 23rd and 26th, 1835, 32° and 30°, equal, or nearly so, to the others in all the requisites of a healthy stock? Has so low a temperature of the hive come under the observation of Mr. Taylor either before or since? What was the temperature of the second hive at 8 a.m., January 2nd, 1836?

Before commencing the experiments formerly reported I had well considered the fact, mentioned by Mr. Taylor, of the bees receding from, or congregating about, the thermometer, and the effect thereon, and I endeavoured to place it in such a way as to obviate as far as possible these misleading fluctuations. I believe the common way of using the thermometer is either by inserting it in a tube leading down into the hive, or, dispensing with a tube, passing it down between the combs and among the bees, and so leaving it, to both of which methods I conceive there is another serious objection over and above those mentioned by Mr. Taylor. The bulb by this process may be inserted so far into the hive as to be below the bees, and consequently below the heat, in which case the mercury will not give a true indication of the temperature of the hive, but one approximating to that of the outside atmosphere. Might not such a position of affairs have been operating in the second hive when its temperature appeared to be so low?

If a weak hive is this unlikely? As I intend prosecuting this matter farther I shall consider it a great kindness if Mr. Taylor will give me his valuable opinion upon the plan I adopted, or tell me what he would consider a better. In lieu of placing the thermometer within the hive, between the combs and among the bees, I fixed it rather over the hive, in a position where the bees could not reach it, but still where the general body of the air which had permeated the hive might yet impinge upon it. Over the hole in the top of the hive I laid a wire grating, on which a feeding-dish was set; within the hole of this dish the bulb was slung, and all escape of air prevented by the space around it being puttied closely up.—D. G. M'LELLAN.

[I am sorry I cannot, at this distance of time, assist Mr. D. G. M'Leilan beyond giving the bare facts as they appear in my communication at page 103 of THE COTTAGE GARDENER. I have no doubt that the stock-hives alluded to were a fair average in point of health and strength, possibly some rather better protected than others. Mr. M'Leilan's method of placing the thermometer was probably a judicious one, unless it was too much above the bees. In the case of a box or a wooden-topped hive the double tube, as shown at page 81, fifth edition of the "Bee-keeper's Manual," might be advantageously used for experimental purposes. A thermometer inserted within the inner tube need reach no lower down from the top of the hive than three or four inches, or within an average temperature. The population of the family, of course, has its influence, as well as the care taken to provide a sufficient protection and winter covering to the hives. With such precaution the temperature may, under ordinary circumstances, be maintained several degrees above freezing without resorting to any unusual theory on the subject.—H. TAYLOR.]

EFFECT OF DAHLIAS ON BEES.

HAVING been a keeper and observer of bees for the last ten years, I cannot allow the absurd notion which has been going round the newspapers, and which was taken up by

your correspondent "SENOJ," to pass unnoticed. It is well known that very few Dahlias will permit the approach of a bee either to extract honey or pollen, the anthers of the flowers being so compactly and closely arranged that the centre is generally inaccessible. At the same time it is, I think, an equally well-established fact that bees travel a very considerable distance for their provender, except when their immediate locality is more than usually attractive. In confirmation, too, of my opinion that the Dahlia is either innocuous to bees, or that the bees do not sufficiently partake of its noxious qualities, I can instance a very large number of successful apiarians who are also Dahlia growers. I am inclined, therefore, to suppose that your correspondent's apiary has suffered from some cause which, perhaps, may be elucidated should he communicate the situation and particulars of his apiary, or, if he will himself examine it, perhaps he will tell your readers the result of his observations.—THOMAS LAXTON, JUN., Stamford.

HARDY FLOWERS BLOOMING EARLY IN JUNE.

WE have a large collection of hardy plants. Would you have any objection to publishing a few names weekly, as they flower, in THE COTTAGE GARDENER, so that lovers of flowers may have them in their gardens from January to January? The under-mentioned are now (June 4) in full perfection.

I commence with *Czackia liliastrium*, flowers beautiful, white. We have them in clumps very fine. *Alyssum saxatile variegata*, yellow; *Geranium Lancastriense*, pink; *Dictamnus (Fraxinella) rubrus* and *albus*; *Cerastium tomentosum*, flowers white; *Dodecatheon elegans*, lilac, and *alba*; *Gnaphalium dioicum*, an everlasting, pink; *Linum flavum*, yellow, one of the lovely hardy plants; *Myosotis alpestris*, blue and white; *Ononis rotundifolia*, pink; *Pulmonaria Virginica*, brilliant blue; *Saponaria ocymoides*, pink; *Sisyrinchium anceps*, blue; *Trollius Americanus*, orange; *Verbascum phæniceum*, purple; *Caltha palustris flore pleno*, orange; *Cheiranthus Marshallii*, golden yellow; *Dielytra spectabilis*, pink; *Oxalis floribunda*, pink. This is a most charming plant, flowering all the summer, only growing to the height of three inches. It ought to be in every garden. *Primula cortusoides*, lilac; *P. involucrata*, white; *Veronica gentianoides*, white and blue; *V. chamædrys*, cream, very dwarf; *Nepeta violacea*, violet; *Melittis melissophyllum*; *M. grandiflora*; *Phlox setacea*, lively pink; *Saxifraga granulata flore pleno alba*.—W. U.

[We shall be much obliged by a continuance of this list. If all our readers will oblige us with a list, at the beginning and end of each month, of the plants then blooming in the open ground, and stating where, we will unite such lists, and publish them as a record and guide. Our correspondents will facilitate our progress if they will send their report in a tabular form thus:—

Phlox setacea	Pink	June 4	Reigate.
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—ED. C. G.]

THE CRUCIFERÆ, OR CROSS FLOWERS.

From Hogg's Natural History of the Vegetable Kingdom.

WE extract from Part I. of Mr. Hogg's valuable work, issued at the beginning of this month, the following interesting account of a family of plants which contains so many subjects of interest to all gardeners:—

"GEOGRAPHICAL DISTRIBUTION.—The Cruciferæ are distributed over the whole surface of the globe. The greatest number is found in the temperate regions of the northern hemisphere, particularly of the Old World; but they become more rare towards the poles, and rarer still towards the tropics. While, according to De Candolle, there are 548 in the north temperate zone, there are 86 in the south temperate; and against 30 growing between the tropics there are 205 found in the north frigid zone.

"PROPERTIES AND USES.—All the parts of the plants of this family are distinguished by a volatile acidity, often united with nitrogen and sulphur, which cause them to emit such a disagreeable odour during decomposition. None of them are poisonous, but their properties are antiscorbutic, pungent, and stimulant. Here are found some of the most important and valuable of our garden vegetables and farm plants. The Cabbage tribe, including the Broccolis, Cauliflowers, and all kinds of culinary winter greens; the Mustard, Cress, Water-cress, Radish, Turnip, Sea-Kale, and numerous others, all belong to this extensive family. It is to the presence of a volatile oil that the Cruciferae owe their acrid and pungent flavour, and their more or less aromatic odour. Some authors have attributed them to the presence of ammonia in these plants; but this substance does not exist in a fixed state; analysis has not been able to detect it in the recent juice or in the distilled water; but, as these plants contain much nitrogen, it may be that during fermentation it may form ammonia by the decomposition of the water. This oil exists in the whole of the family, and in all the organs of these plants, but with various degrees of intensity, so that it renders them either simply exciting or more or less irritant; thus the root of the Horse-radish, the large leaves of the Garden-cress, the seeds of different kinds of Mustard, produce redness, and even inflammation on the skin, when applied for a certain space of time. This is not the case, however, in a great number of the plants of this family; the acrid and volatile principle only exists in such proportions that their acrid flavour is subdued by the presence of a sufficient quantity of water or of mucilage to render them agreeable. The leaves of different species of Cress, of Scurvy-grass, Water-cress, and, in general, the greater part of this family, are useful, either alimentarily or medically; but, as their active principle is very fleeting and volatile, they should always be used in a fresh state.

"The medical action of the Cruciferae is active and instantaneous. They stimulate energetically the different functions of the constitution, or act more especially on only one of them. In the first case they rank among the general stimulants, and are called antiscorbutics, because it is against the scurvy that they are most frequently, and with the greatest advantage, employed. In the other case they are considered emmenagogue, sudorific, or diuretic, according as they stimulate the relative organs.

"From this family we also obtain a great number of wholesome and nutritious vegetables, which have been obtained by the cultivation of the wild species. Such are the Cabbage, Broccoli, Cauliflower, Radish, and Turnip, which, by culture, have acquired a development of watery, sugary, and mucilaginous principles, which tend to destroy or conceal the acrid taste so prevalent in those in a wild state.

"Another uniformity of character is found in the seeds. Besides the volatile principle which exists more or less in all in different degrees, they contain a greater or less quantity of fat oil, which is obtained by expression.

"ARABIDÆ.—In this tribe we meet with some of the greatest favourites of the flower garden—the Ten-week, the Brompton, and the Queen's Stock; the Wallflower, the Yellow Rockets, the Dame's Violets, the pretty Wall-crests, the Water-cress, and the Winter-cress.

"*Nasturtium officinale*, or *Common Water-cress*, is met with in the wild state in rivulets, springs, and ponds, throughout almost the whole of this country, and is extensively used as a wholesome and beneficial salad. Like all the members of the family to which it belongs, it is useful in scorbutic affections and visceral obstructions. The Water-cress, which was formerly obtained from the natural beds only, is now extensively cultivated in several places in the neighbourhood of London, for the supply of the metropolitan, and, indeed, the provincial markets also. The best Water-cress beds are on chalky or gravelly soils, and hence those about Winchester, watered by the Itchen, those at Riverhead, in Kent, and at the source of the Thames, near Cirencester, in Gloucestershire, have long been celebrated. But when the plant is cultivated artificially, and if the rills to be planted are muddy at the bottom, the mud must be removed, and a bed of gravel substituted. The depth of water requisite for the culture of the Water-cress is from four to five inches, and the width of the bed can be regulated according to circum-

stances; but in planting such a bed, or in gathering Water-crests from natural beds, great care should be observed not to mistake that poisonous plant, *Sium nodiflorum*, or Water-parsnip, which so much resembles the Water-cress. The Water-cress has been found to contain iodine.

"*Barbarea præcox* is cultivated under the names of *American Cress* and *Belleisle Cress*, and is esteemed by many as a spring salad. It has the flavour of the Water-cress, and those who are partial to that flavour, without being able to obtain the true Water-cress, frequently cultivate this throughout the whole year as a substitute. *B. vulgaris*, cultivated by the name of *Winter Cress*, and called by the French *Herbe de Ste. Barbe*, is also used as a salad plant in the spring; but it has a nauseous, bitter taste, and is in some degree mucilaginous. In Sweden it is used as a culinary vegetable, the leaves being used as we do Kale.

"*Cardamine pratensis*, that beautiful wild flower of spring, clothing as with a bridal mantle our moist meadows and river banks, and known by the name of *Lady's Smock* and *Cuckoo Flower*, is also used as a salad in the north of Europe. The leaves are slightly pungent and somewhat bitter; and from the whole plant the juice is expressed, and taken in a dose of a wine-glassful by the inhabitants of northern countries, who live extensively on salt fish and meats. It is esteemed an excellent remedy in scorbutic diseases, obstructions of the liver, and jaundice. About a century ago it was highly extolled as a remedy against epilepsy; but taken inwardly it has little sensible effect upon the system, and is therefore only regarded as a popular nostrum.

"*Dentaria diphylla*, or *Toothwort*, is used by the natives of North America, by whom it is called *Pepper-root*; the roots having a pungent, mustard-like taste. *D. bulbifera*, which grows wild in most shady woods in England, is said, when dried, to have a greater pungency than the Pellitory of Spain, and was formerly used as a remedy for toothache."

(To be continued.)

LARGE SWARM OF BEES.

YOUR correspondent "HIGHFIELD" states that he hived on the 16th of May what appeared to him a very strong swarm, being sufficient to fill a couple of quarts. Perhaps it will surprise him when I state that on the 11th of May a swarm was hived here which I should think would have filled two gallons. It was certainly the largest swarm of bees I ever recollect seeing, and I have been familiar with bee-keeping from boyhood. Another swarm we had on the 13th, two days later: this was a very fine swarm, but not quite so large as the first. The "stocks" were well fed during the whole of the winter with honey, barley-sugar, and sugar and beer, which I have no doubt mainly contributed to their strength.

Are you aware of any swarming previous to the 11th? We had three in May, viz., on the 11th, 13th, and 23rd, all hived in beautiful condition, but upon the old principle, the old cottage straw hive.—G. FRY, *the Gardens, Manor House, Lee, Kent*.

TO CORRESPONDENTS.

MELONS AND VINES IN POTS (E. P.).—Stop the Melon shoots—you have acted right—and set the fruit as soon as you can get the flower. Turn your Vines at once into nine-inch pots, and give them bottom heat if possible, and plenty of light, and ere long turn them into twelve or fifteen-inch pots, and you have no occasion to wait until 1859 for fruit from them. They ought to do well in 1858. We will try and go more into detail as soon as we can find room, but did we do so we could only repeat what you seem to have seen in previous volumes, and as you are chiefly interested we think you ought to consult the index of contents for yourself. We also wish our correspondents not to imitate us in referring to a *late* or a *back* number. We are obliged to do so, purely because we cannot command the time at this season of the year, and we are sure all our coadjutors will agree with us in thinking that those correspondents ought to be best attended to who, in making any reference, give us at once volume and page.

NAMES OF PLANTS (A *Staines Subscriber*).—Your plant is the common Fumitory, *Fumaria officinalis*. (Cheshire).—Yours is *Lamium maculatum*, or Blotch-leaved Dead Nettle, or Archangel, a very singular-looking plant. It flowers early, and once well planted, whether in the mixed border, rockery, or as a bedding plant, only requires its trailing stems to be thinned out now and then during the

season of growth. It blooms from April to October. Where bedding is carried out to a very great extent we see no objection to this marked-leaved Dead Nettle as a bedder. Its white-blotched leaves are attractive all the year round, and its purplish red flowers are produced very freely. (Mortlake).—No. 1. Broad-leaved Birthwort, *Aristolochia siphocampylus*. No. 2. A dwarf shrub, *Deutzia scabra*. (An Old Subscriber).—Yours is *Narcissus poeticus*, which may be removed at any time after the leaves die down naturally, and until the end of October. The whole family of the *Narcissus* force well.

HARDY FLOWERS (W. U.).—We shall be much obliged by the lists you offer. Let us have your name and address confidentially, and not for publication.

CORRECTING ABUSES (F. H. S.).—We cannot follow your advice, as no good can arise from prosecuting the subject any further. Our object for the present has been attained; but you may depend upon it when occasion requires, when wrongs are to be redressed or abuses checked, you will always find us at our post, ready to aid in every good cause affecting the gardener and gardening.

RHUBARB FOR EXHIBITION (Laicus).—Whoever advises you to leave only three or four leaves is wrong. Select one of the largest varieties, such as the *Victoria*, manure the ground heavily, and give, as soon as growth commences, strong liquid manure twice a week, and on other days an abundant supply of water. Let one flower-stem rise up, and remove all the others. Do not remove a leaf. Rich food and moisture will produce size and crispness.

ARUM AT PARIS (Noah).—We think the plant you saw must be the *Richardia Aethiopica*, grown of a dwarf size.

LAWN ON GRAVEL (G. L.).—Nitrate of soda would not prevent the lawn turning brown in patches. The only remedy will be to strip off the turf on those places, remove the gravel to the depth of a foot, fill up the hole with loam, and return the turf to its place.

VARIOUS (An Amateur).—Look into our 254th number, and you will see how *Geraniums* or *Pelargoniums* are hybridised. Your grafted Rose does not require a sucker to be left on the Briar stock. In our 35th number you will find a drawing and all about the Vinegar plant.

WOODLICE (Melons).—Pour boiling water down between the soil and side of the frame.

VARIOUS (E. Simons).—We hope to accomplish a general index. The "Authoress of My Flowers" will resume her pen ere long, we hope. What will Mr. Beaton say to our correspondent's heterodox postscript? which is as follows:—"The bedding system (bad luck to it!) has driven so many herbaceous plants out of cultivation, that when I lose a plant I find it difficult and often impossible to replace it. If the only use of plants is to produce certain effects by the arrangement of different colours, why cannot those effects be produced by painted boards or posts?"

COTTAGE GARDENER AT YORK (H. J. W.).—If by post from our office you would have it on every Wednesday morning; and so you would if your bookseller had a parcel from London on the Tuesday of each week.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JUNE 26th. EXETER. Sec., T. W. Gray, Esq., Queen Street, Exeter.
JULY 8th, 9th, and 10th, 1857. LEAMINGTON. Sec., Thomas Grove.
JULY 9th. PRESCOT. Sec., J. F. Ollard.
JULY 28th, 29th, and 30th. SHEFFIELD, SOUTH YORKSHIRE, AND NORTH DERBYSHIRE. Sec., William Henry Dawson, Fig Tree Lane, Sheffield.
AUGUST 8th, 10th, 11th, and 12th. CRYSTAL PALACE. Sec., W. Houghton.
AUGUST 19. BRIDLINGTON. Sec., Mr. Thomas Cape.
SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.
SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Sec., Mr. H. Churchill, King's Head Hotel.
OCTOBER 1st and 2nd. WORCESTER. Sec. Mr. G. Griffiths, 7, St. Swithen Street, Worcester. Entries close Sept. 19th.
NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.
DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.
DECEMBER 30th and 31st. BURNLEY AND EAST LANCASHIRE. Entries close December 1st. Secs., Angus Sutherland and Ralph Landless.
JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.
JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.
N.B.—Secretaries will oblige us by sending early copies of their lists

CUPS FOR COLLECTIONS.

I do not approve of cups for collections of poultry, nor is there any satisfactory mode of awarding them. All the principal Judges have been glad to get rid of the difficulty and responsibility of the decision. Committees have felt they were mistakes, and hence their disappearance from almost all the exhibitions. Evils very often work their own cure, and it is so in this instance. Where a valuable cup is offered as an inducement to large entries it is generally

done at the expense of the prizes in general. I quite agree with Mr. Hewitt that the more widely prizes are scattered the better it is for all concerned in shows; and I think that happened to an unusual extent last year.

A collection cup must either be given to the owner of the best and most striking, and, therefore, most valuable birds, or else to the largest exhibitor. Both are wrong in my opinion. If it be given to the most valuable collection the richest man will get it; if to the most numerous, then to the owner of the largest collection. Who can or will decide, except upon compulsion, as to the best collection? The very question as to which is the best fowl is still undecided. One swears by his Dorkings; another pins his faith to Cochins; a third worships Spanish; a fourth will prove that Hamburgs are the only profitable fowls; the fifth, that Game are not only the best, but the original poultry; and so on. Judges themselves have their favourite breeds. Certain of them have been their pets from youth; and although they try to envelope themselves in stern indifference, yet their eyes and their inclinations are drawn irresistibly to them; and when decision is difficult the line of beauty, or the knowledge of good qualities acquired in early years, is not without weight. Nor are they wrong. Every breed has its peculiar and exclusive merit—it has its own admirers; and who, then, shall decide the best collection?

The offer of a collection cup is to induce large entries. Now, I think it will act in opposition to them. If a cup is given for the best collection it should be limited to four, or, at most, six pens. I prefer the former number if the cup is offered at all; but, as I said before, I disapprove of it. There are some exhibitors who are known to possess birds enough to enable them to send from fifteen to twenty pens to a show. If the judgment of a cup is to go by points, irrespectively of the number shown, this entry of twenty pens at once shuts out fourteen or fifteen exhibitors of four pens each. It is then a clear loss to the show. It does not avail to say that the owner of four pens may take a first prize in each; it will not help him. The exhibitor of twenty pens will of necessity show many in the smaller classes, and he must in them be more or less successful. It is easier to take a prize against three competitors than against thirty. If points are to tell, the man who in a low class shows a pen of average birds, and competes only against one other entry, will gain as much by it as the exhibitor of the best pen of birds in the show.

Again, the second prize, awarded more in obedience to the rule that offers premiums for the *best* than to the merits of the birds themselves, and which is often given to creatures which, paradoxically, become the best without pretensions to being good, would count as much as the second prize gained by positive and superlative merit in the teeth of the greatest competition.

I cannot fancy anything so suicidal on the part of a Committee as to publish that the most valuable prize they offer shall be given to the largest exhibitor. This must be the result if points are to tell. All large exhibitors know how to show their birds; and he who can show twenty pens will always beat an opponent who has but six. The consequence is to drive away all small exhibitors. Collection cups do more to discourage necessitous but ardent amateurs than any rule could do. The poor man has means or opportunity of breeding one sort only. In this he often excels, and success is open to him. The proper plan is to offer a good prize, either in money or plate, for each breed. This is within the reach of all; and many who have bought very expensive birds can tell to their cost that success is not to be bought.—B.

DUCKWING GAME BANTAMS.

YOUR correspondent, "MERRY LEGS," writes inquiring how to breed Duckwing Game Bantams. I believe he is no more anxious to know than many others, and, perhaps, not more so than the owners of the much-coveted variety. But let us inquire what the variety hitherto exhibited has been. I am not aware of more than two parties who have hitherto professed to exhibit them. In both cases cock birds, with something of the feather of the Duckwing Game,

have been paired with Black Red hens; and why? Most probably because Duckwing Bantam hens were not so easy to manufacture as Duckwing cocks.

I believe no such thing as a perfect pen of Duckwing Bantams is yet to be met with, or it would most probably have been forthcoming ere this. Probably this season may produce birds passing off as such, but I fear with little real pretension to the name except in feather. One of the cock birds exhibited last season had much the appearance of a mongrel-bred Bantam, formerly possessed of a double comb and white ear-lobe, till these unornamental appendages had been displaced, and their owner became, by this metamorphosis, a much-coveted and exceedingly rare specimen of fancy poultry. What some Poultry Judges have been about, to award prizes and commendations to such pens made up with a cock of this description and hens of quite a different variety, has been puzzling to some less successful exhibitors who have exhibited uniform pens of Black Reds in competition with them, and could not comprehend why a badly-matched set of fowls in the Bantam classes should be set before a pen of well-paired birds, and perfect specimens both in feather and form.

I do not wish by these remarks to disparage either good birds or the exertions of fanciers, who have done their utmost to produce miniature Duckwing Game fowls; but I do contend that the birds hitherto exhibited as such are not entitled to the praises and honours that have been bestowed upon them, and that our Judges have acted erroneously where they have awarded them prizes.—EQUITY.

POLANDS SHOULD HAVE COMBS.

SINCE my query appeared in THE COTTAGE GARDENER, whether the Crested fowls should have a comb or not in the shape of two spikes, I have been carefully looking at the various letters you have published on the question, and am happy to perceive that the majority say they should have combs.

It is scarcely necessary to refer to those gentlemen who agree with me. I therefore come to the opposing letter of "C. E. C.," the initials, I presume, of a successful exhibitor of Crested fowls, the remarks conveyed in which may perhaps stagger beginners, but not one of, perhaps, as long breeding and reading experience as himself. In Hamburgh fowls, now improperly called Polish, "C. E. C.," in No. 448, begs permission to be allowed "to correct the monstrous assertions, &c.," and then proceeds to denounce the presence of a comb in the Crested birds. Now, I beg at once to protest against this "monstrous correction," and to put two questions to "C. E. C." to test the point. *Will he guarantee that the finest specimens that can be produced of Crested birds of any variety without combs will not produce chickens that shall have combs?* If he cannot guarantee that, and I believe he cannot, there is an extinguisher on "C. E. C.'s" corrections. "C. E. C." says Crested fowls should not have combs; dame Nature says they should, to support the crest in front, and accordingly gives it. "C. E. C." talks of the "malformation of a comb," &c.; I am not in favour of malformations.

I now come to the second and more serious question, as affecting judgments at Poultry Shows. Will "C. E. C." or other gentlemen exhibitors of Crested fowls *without combs* undertake to say they have never dubbed the combs and wattles, which in like manner appears to be an abomination? The publication of replies to these questions may lead to some interesting facts for the uninitiated. I believe the Judges are placed in a false position on the subject, and the sooner it is rectified the better. "C. E. C." would wring the neck of the first chicken showing "the noble comb," and "R. P. W." would wring the neck of every one that did not do so, as he invariably for twenty years has done, having found that birds deficient in the *well-formed* spikes of an inch in length, and pointing forwards to support the comb (crest?), or reduced to mere tubercles of the skin, were wretched, puny things, deficient in virility, and, if not early consigned to the spit, would die on the dunghill.

In the same number alluded to (No. 448) appears a letter, signed "PERRUQUIER," which may have been written by "C. E. C." for all I know, so great is the value of an incognito. I must, however, beg to dissent from the logic which

it contains. "PERRUQUIER" informs us that "in all poultry pieces of the old Flemish painters a cock is figured with two spikes in front, and a something on his head between a lark-crest and a topknot." It is a pity the gentleman did not call it a perruque. I should, however, recommend him to have another look at the said paintings, or engravings therefrom, which are numerous, and he will find it a "very palpable" crest, floating, globular, not at all resembling a lark-crest. The birds so depicted were the Hamburgh fowls. "PERRUQUIER" then informs us, "But this is not a Polish cock," &c. What, then, is a Polish cock? When did it arise? How begot—how nourished? Reply with the pedigree of "the Polish cock."

Notwithstanding the convincing reply of "THE COMB CHAMPION," which will, I have no doubt, carry conviction to unprejudiced minds, I shall proceed a little further to assist "PERRUQUIER" and "C. E. C." in the elucidation which your readers may naturally expect from parties who lay down the law. In former letters in your paper I have pointed to those Gold and Silver-crested fowls known from so remote a time as Hamburgh fowls.

Mr. Tegetmeier lately, in a letter in THE COTTAGE GARDENER, stated that he had got a work 100 years old relative to the table qualities of Polish and Hamburgh fowls (the former, I believe, meant the White-crested Black, the latter the Gold and Silver-spangled or Laced birds). He regretted the work in question did not give the description. It is a matter of gratification that since his letter appeared I am enabled to supply it by the discovery of "A New Dictionary of Natural History, or Compleat Universal Display of Animated Nature." The title-page is lost, so I cannot give the author's name. The plates bear the date of 1786. No doubt some of your numerous readers can supply this deficiency. In it I find the Hamburgh cock. "The Hamburgh cock is a very stately fowl. His bill is thick at the base, but ends in an acute point; his eyes are of a fine yellow colour, encircled with dark-coloured feathers, under which there are tufts of black ones which cover his ears. His comb, which is reddish, reaches about half way over his head, the hind part being covered with dark-coloured feathers inclining to black. His throat and gills are of the same colour, with an admixture of orange and red feathers waving round his neck, which are black at the extremities. His breast and belly are of a dark colour spotted with black, and his thighs, as well as the lower part of his belly, are of a shining velvet black. The superior parts of his neck and back are of a darkish red; his tail consists of red, orange-coloured, and shining black feathers; his legs are of a leaden hue, and the bottoms of his feet are yellow."

I now leave the question for the present to the consideration of the no-comb gentry.—R. P. WILLIAMS.

ADVICE GRATIS.

My grandfather, a shrewd old man, a lawyer, used to tell a story of advice gratis. I will tell it to you, and whether my counsel ought to be placed in the same category, and regarded at the same marketable value, is for those who read to determine.

A worthy old farmer friend, a client, on meeting my relative, began, as is usual in more counties than one, to descant upon the weather, the hardness of the times, and the scarcity of money, &c., and ended by a kind of half-begging, sideways sort of mode of getting advice gratis.

"Well, Sir, what d'ye think? You know the little matter of business we had together about neighbour Jones's few acres of old *ruffit** I bought? Well, now, I let a decentish sort of a chap in I thought, but if he arn't a turned out a rig'lar *queer un*, and us have a been talking if so be us *drap upon en* in some *et arter this fashion* (naming the plan) 'twill be a sarving the rascal right—don't you think so, lawyer? I s'pose there ain't no other way?"

Grandfather.—"Oh! exactly—very good. 'Pon my word it is really raining. Good-by, farmer." (*Hurries away.*)

Some short time after the farmer cuts granddad off going to market, as was usual for gentlemen in a country town some century since, and began his brain-sucking by ex-

* Rough land.

plaining to the old man all his proceedings since the last interview, ending by saying, "Well, I s'pose next week we must do so and so," naming his scheme.

The rejoinder was, as usual, half abstractedly, "Oh! exactly—very good—certainly!"

Not very long after the farmer made his appearance at the office, and commenced a tirade of invective and abuse. Accusations of robbery, lying, and swindling flowed rapidly from the lips of the enraged countryman. At last, when, from the excess of rage, the man had sunk exhausted on a friendly chair, my relative mildly ventured to ask the cause of all this explosion. A rejoinder was quickly commenced.

"You know, Sir, you told me to take the law of my rascally chap, as how you knowed all about, and, Sir, I've a done everything you said, and you've a let me in for a precious bill I know. I shouldn't a minded if when I axed your advice you'd a told the truth."

Grandfather.—"Asked my advice!"

Farmer.—"Asked your advice! why, yes."

Grand.—"I really don't remember (*taking down a long red book*). What was the date?"

Farmer.—"What's the use of looking in that old book? You know all about it as well as I do."

Grand.—"The fact is this book contains entries of matters relating to advice, and the proper sums to be charged, &c."

Farmer.—"Charge! Why, you never charged. Of course you gived it to me."

Grand.—"Pray, my good friend, be still. I wonder you hadn't been ruined; for, remember, advice gratis is seldom worth having."

The advice I give is in regard to poultry matters, and, as the numerous shows are just commencing, it might not be unacceptable to the readers of this periodical if a cursory view be taken of some of the various sorts introduced into the schedules for competition as *per se*, that is, thorough bred; but to descant upon each would be to supersede or add to the many excellent works so comeatable from their cheapness to everybody, and therefore I will advise every person about to commence the fancy to make himself fully acquainted with the peculiarity of each kind. It is marvellous with what ease a thorough Judge singles out a cross bred. It is not wholly necessary that a Judge should know every little peculiarity—ofttimes they are very obscure; but it is necessary to know a point of excellence difficult of attainment, viz., the pure white *satiny* and unstained face of the *Spanish*, in contradistinction to a harsh, rough, and tainted one; the broad shoulders, short legs, good colour, snaky head, &c., of the *Cochins*; and, in addition, the enormous breasts, with no crooked bones, of the *Dorkings*, in opposition to a narrow, stilty one of these very heavy kinds. But stop, here is the *Malay*. Now, character of build is everything with this bird—a *stork-like* bird of great weight, great length of leg and neck, immense shoulders, grab-eyed, and of intense crimson colour, with a tail not flowing, but the sickle feathers stuck in almost upright, and the ends dropping suddenly down: a lack of either of these essentials would be fatal.

The *Game*.—*Vide* some back numbers of this periodical. I cannot tell you anything more about them.

The *Hamburgs*.—How difficult was it to get the white ear-lobe! now they are seldom seen without. These birds are now perfection, and the good ones are *not common* by any means. The breasts of the cocks in the Spangled almost equal the rest of the body for regularity of marking. In this class character and style are often overlooked. The four kinds are very different in their build, as also in colour, in different localities, especially the Golden-spangled. Give me the dark colour: I find these breed the best cocks. Three years since the male bird's breast was always black; now it is a mass of spangles.

Polands.—These birds are very beautiful, and show the result of careful breeding. They differ from the last-mentioned class in having merely a rudimentary comb, and in its stead a topknot. This, to be perfection, should be a round, compact mass of feather, like a child's worsted ball, and if of the Spangled class similarly laced. There is much to know about this class which space will not permit me to descant on.

Bantams.—And here character must assist us. As a general maxim the cock should be a veritable coxcomb, very

small, good double Hamburg comb, white ear-lobes, wings low, good tail, tight-feathered, and delicate-looking. These are general points in reference to these breeds, excepting the hen-tails of the Sebright, and comb, &c., of the Game. The bars, lacings, size, &c., are often better in birds lacking the coveted point than in those with it; therefore one is apt to overlook the grand point unless taking the opinion of a good judge.

How would a beginner look on bringing home his new purchase birds of extraordinary merit as to size, shape, and colour, to find, on submitting them to the inspection of a good judge, to have them set down as worthless for show purposes? For instance, a Cochin with willow legs; a Spanish with a speck of red over the eye; a Dorking with a crooked, narrow breast and bad feet; a Malay with a Game comb, and Game with a Malay one; a Spangled Hamburg with red ear-lobes, and Pencilled with mealy hackles in addition to them; Polands with combs, and Bantams with cupped ones.

In conclusion, attend to all that has been urged in this periodical respecting the sale of birds. "I have suffered;" and, whatever you do, never part with a bird with the view of risking his return. State fairly his good and his bad points; if manifestly ill suited to the person applying to you, by forwarding it no good will ensue. And another important point is, do not be seduced by designing men, who do not mean actually to rob you of your bird, but by dilly-dallying, offering to exchange, &c., gain time to breed from him, and then send him back, perhaps maimed, and too late in the season for exhibiting. This has happened to me this season. More satisfaction is gained and money earned by selling reasonably and honestly; and when you have found out such a one, probably not over affluent, and living in the country, relieve him of the greater portion of his chickens or winter birds; eat some, sell others, and keep the remainder, and you will find his means to please you will increase, and his preference also. I have known many a man date his success in poultry matters from dealing freely, fairly, and liberally with an emulative villager.—W. H., *Exeter*.

VARIETIES OF GAME FOWLS.

Will you allow me a space in your valuable paper for the purpose of saying a little about Game fowls? I read in your paper a long list of the different sorts, and was bewildered when I tried to recollect "Furnaces," "Birchens," "Gingers," and a host of others. Now, it appears that such a number of sorts is very dangerous to the breed. Half these so-called different kinds are only crosses between the chief and proper sorts of Game; and all this crossing has given an immensity of trouble, for scarcely any breeder of Game is there but has some pet cross, called by the name of a different variety, and having a standard for colour which he himself has formed. Then what confusion is there now as to the legs of Game. One man defends white; another raves for yellow; a third will not look at a bird that is not olive-legged; while a fourth says they are all wrong, and blue is the right.

The chief and only proper sorts of Game are, to my thinking, 1st, the various Reds; 2nd, the Duckwings; 3rd, the various Piles; 4th, the Greys and Blues; 5th, White and Black. Of all these I prefer Black-breasted Reds and Whites; and Whites are one of the handsomest sorts. I forgot to mention Brassy-winged, of which the best is the "Furness" breed. Game fowls are capital sitters and mothers; indeed, scarcely to be surpassed in this respect. They also lay pretty frequently, and their eggs are of a capital flavour.

By the by, reading "H. R.'s" account of those splendid Spanish made me think I would tell your readers, if they want prime Spanish, to prowl about in the London stable-yards and mews, for you often see better birds at these places than elsewhere.

Duckwing Bantams can be bred by mating a small Duckwing Game cock to a Silver-grey Bantam hen, and so going on for five or six generations, mating the aforesaid hen to the smallest cock of the brood, until you get your Bantams.—PROSPERO.

BATH AND WEST OF ENGLAND SOCIETY'S
POULTRY SHOW.

THIS Show was held at Newton on the 4th, 5th, and 6th of June, and the following prizes were awarded:—

SPANISH.—**SILVER CUP**, Mr. J. Kilvert Bartrum, Bath. Second, Mr. G. Botham, Wexham Court, Slough, Bucks. Commended, Mr. A. G. Brooke, Woodbridge, near Ipswich.

DORKING (Coloured).—**SILVER CUP**, Mr. C. H. Wakefield, Malvern Well, Worcestershire. Second, Mr. G. S. Fox, the Court, Wellington, Somerset. Highly Commended, Mr. J. K. Fowler, Prebendal Farm, Aylesbury, Bucks; Mr. C. R. Titterton, Birmingham, Warwickshire.

DORKING (White).—**SILVER CUP**, Mr. F. J. Coleridge, the Manor House, Ottery St. Mary, Devon. Second, Mr. H. Lingwood, Needham Market, Suffolk. Highly Commended, Mr. W. Symonds, jun., Milbourne, St. Andrew, Blandford, Dorset.

COCHIN-CHINA (Cinnamon, Buff, or Lemon).—**SILVER CUP**, Rev. T. H. Roper, Eton, Windsor, Bucks. Second, Mrs. H. Fookes, Whitechurch, Blandford, Dorset.

COCHIN-CHINA (Brown, Partridge, and Grouse).—**SILVER CUP** and Second prize, Rev. G. F. Hodson, North Petherton, Somerset. Highly Commended, Mr. G. C. Adkins, West House, Edgbaston, Birmingham; Mr. H. Tomlinson, Balsall Heath Road, Birmingham. (The whole of this class Commended.)

COCHIN-CHINA (White and Black).—**SILVER CUP**, Mr. R. Chase, Birmingham. Second, Mr. A. Peters, the Priory, Fratton, Portsmouth, Hants. Commended, Mr. H. Loe, jun., Appuldurcombe, Godshell, Isle of Wight.

BRAHMA POOTRA.—**SILVER CUP**, Mr. J. Hopkins, Higford, near Shiffnal, Salop. Second, Miss Anne Brenford, Puddaven, Totnes, Devon.

GAME (White and Piles).—**SILVER CUP**, Mr. S. Matthew, Chilton Hall, Stowmarket, Suffolk (Piles). Second, Mr. J. Camm, Farnsfield, near Southwell, Notts (White). Highly Commended, Mr. G. S. Cruwys, Cruwys Morchard Court, Tiverton, Devon (White); Mr. T. H. D. Bayley, Ickwell House, near Biggleswade, Bedford (Piles).

GAME (Black-breasted and other Reds).—**SILVER CUP**, Mr. S. Matthew, Chilton Hall, Stowmarket, Suffolk. Second, Mr. N. M. de Rothschild, Gunnersbury Park, Acton, Middlesex. Commended, Mr. G. S. Cruwys, Cruwys Morchard Court, Tiverton, Devon; Mr. J. R. Rodbard, Aldwick Court, Langford, near Bristol, Somerset; Mr. J. Fox, Devizes, Wilts.

GAME (Duckwings and other Greys and Blues).—**SILVER CUP**, Mr. S. Matthew, Chilton Hall, Stowmarket, Suffolk. Second, Mr. W. Dawson, Selly Oak, Birmingham. Highly Commended, Mr. C. Edwards, Brockley Court, near Bristol.

GAME (Blacks and Brassy-winged, except Greys).—**SILVER CUP**, Mr. W. Dawson, Selly Oak, Birmingham. Second, Mr. H. Parry, Wellington, Salop.

MALAY.—**SILVER CUP**, Mr. W. Rogers, Woodbridge, Suffolk. Second, Mr. Henry Adney, Lympstone, Devon.

HAMBURGH (Golden-pencilled).—**SILVER CUP**, Mr. J. Martin, Northwick Terrace, Claines, Worcestershire. Second, Mr. G. C. Adkins, West House, Edgbaston, Birmingham. Commended, Rev. T. L. Fellowes, Beighton Rectory, Acle, Norfolk; Mr. A. G. Brooke, Woodbridge, Ipswich, Suffolk.

HAMBURGH (Silver-pencilled).—**SILVER CUP**, Mr. E. Archer, Malvern, Worcester. Second, Rev. T. L. Fellowes, Beighton Rectory, Acle, Norfolk. Highly Commended, Mr. E. Archer, Malvern, Worcester.

HAMBURGH (Golden-spangled).—**SILVER CUP**, Mr. J. B. Chune, Green Bank, Coalbrookdale, Shropshire. Second, Mr. G. S. Fox, the Court, Wellington, Somerset.

HAMBURGH (Silver-spangled).—Second, Mr. J. Kilvert Bartrum, Bath. Commended, Mr. J. B. Chune, Green Bank, Coalbrookdale, Shropshire.

POLAND (Black and White Crests).—**SILVER CUP**, Mr. T. P. Edwards, Lyndhurst, Hants. Second, Mr. G. C. Adkins, West House, Edgbaston, Warwickshire. Highly Commended, Mr. G. S. Fox, the Court, Wellington, Somerset; Mr. T. Batrye, Upper Brownhill, near Huddersfield, Yorkshire.

POLAND (Golden-spangled).—**SILVER CUP**, Mr. R. H. Bush, Litfield House, Clifton. Second, Mr. G. S. Fox, the Court, Wellington, Somerset. Highly Commended, Mr. R. H. Bush, Litfield House, Clifton. Commended, Mr. J. J. Fox, Devizes, Wilts.

POLAND (Silver-spangled).—**SILVER CUP**, Mr. G. C. Adkins, West House, Edgbaston, Warwickshire. Second, Mr. W. Dawson, Selly Oak, near Birmingham. Highly Commended, Mr. G. C. Adkins, Edgbaston, Warwickshire. Commended, Mr. J. J. Fox, Devizes, Wilts; Mr. B. J. Ford, Ide, near Exeter.

COCK AND TWO HENS, OF ANY AGE, AND OF ANY DISTINCT BREED NOT NAMED IN THE FOREGOING CLASSES.—**SILVER CUP**, Miss S. H. Northcote (White Spanish). Second, Mr. C. Coles, Fareham, Hants (Andalusian). Highly Commended, Rev. T. L. Fellowes, Beighton Rectory, Acle, Norfolk (Black Hamburgs). Commended, Mr. H. Churchill, Gloucester (Emu, Negro, or Chinese Silkies).

CHICKENS.—Equal awarded, Mr. E. Archer, Malvern, Worcester (Coloured Dorking); Mr. J. R. Rodbard (Partridge Cochins). Highly Commended, Mr. J. R. Rodbard, Aldwick Court, Langford, near Bristol (Spanish); Mr. J. K. Fowler, Prebendal Farm, Aylesbury (White Cochins); Mr. E. Archer, Malvern, Worcester (Silver-pencilled Hamburgs). (Very good class.)

BANTAMS (Gold-laced).—First, Mr. G. Crocker, 23, Queen Street, Plymouth. Second, Mr. U. Spary, Market Street, Herts. Highly Commended, Miss F. C. Macdonald, Lympstone, Devon. Commended, Mr. M. Leno, jun., Harpenden.

BANTAMS (Silver-laced).—**SILVER CUP**, Mr. G. S. Cruwys, Cruwys Morchard Court, Tiverton, Devon. Second, Mr. U. Spary, Market Street, Herts. Highly Commended, Mr. M. Leno, jun., Harpenden, near St. Alban's, Herts.

BANTAMS (White).—First, Mr. G. S. Addington, Upottery, Honiton, Devon. Second, Mr. G. C. Adkins, West House, Edgbaston, Warwickshire. Highly Commended, Rev. G. F. Hodson, North Petherton, Somerset.

BANTAMS (Black).—First, Mr. F. G. Stevens, Hemyock, Wellington. Second, the Hon. Miss Dillon, Ditchely, Enstone. Highly Commended, Mr. W. H. Holmes, Bridgewater, Somerset.

BANTAMS (any other variety).—First, Mr. T. H. D. Bayley, Ickwell House, near Biggleswade, Bedford (Black-breasted Red Game). Second, Mr. T. J. Cottle, Pulteney Villa, Cheltenham, Gloucestershire (Game).

DUCKS (White Aylesbury).—Equal awarded, Mr. J. K. Fowler, Prebendal Farm, Aylesbury; and Mr. B. J. Ford, Ide, near Exeter.

DUCKS (Rouen).—First, Mr. J. K. Fowler, Prebendal Farm, Aylesbury. Second, Mr. J. Marshall, Taunton, Somerset.

DUCKS (any other variety).—First, Mr. J. K. Fowler (Black East India). Second, Mr. J. Marshall, Taunton, Somerset (Buenos Ayres).

GEESE.—Only one entry.

TURKEYS.—First, Mr. J. R. Rodbard, Aldwick Court, Langford, near Bristol. Second, Mrs. H. Fookes, Whitechurch, Blandford. (Very good.)

PIGEONS.—*Carriers.*—Prize, Mr. F. G. Stevens, Hemyock, Wellington, Somerset. *Barbs.*—Prize, Mr. G. C. Adkins, West House, Edgbaston, Warwickshire. *Pouters.*—Prize, Mr. G. C. Adkins, West House. *Runts.*—Prize, Mr. F. G. Stevens, Hemyock (Blue.) *Fantails.*—Prize, Mr. F. G. Stevens, Hemyock. *Jacobins.*—Prize, Mr. J. A. Mackey, Fairhill, Exeter, Devon. *Turbits.*—Prize, Mr. T. Twose, Bridgewater, Somerset. *Nuns.*—Prize, Mr. G. C. Adkins, West House, Edgbaston. *Archangels.*—Prize, Mr. F. G. Stevens, Hemyock. *Trumpeters.*—Prize, Mr. F. G. Stevens, Hemyock. *Almond Tumblers.*—Prize, Mr. T. Twose, Bridgewater. *Tumblers (any other variety).*—Prize, Mr. F. G. Stevens, Wellington (Kite Tumblers). *Owls.*—Prize, Mr. G. C. Adkins, West House, Edgbaston. *Dragoons.*—Prize, Mr. W. C. Burningham, 142, Edgware Road, Middlesex. *Any other sort of Pigeon.*—Prize, Mr. G. Hopkins, George Street, Plymouth (Frillbacks).

OUR LETTER BOX.

TO BUY OR NOT TO BUY?—"If a man of good poultry knowledge emigrates to France, say Havre, next spring, what would you advise him to do in re poultry? Limited means and an eye to profit. Should he embark in the native birds or not?"—A. B.

[Do not buy unless you can buy very superior birds for very inferior prices. Even the best Crève Cœurs fetch but little money in England.]

GUINEA CHICKS DYING (J. Golb).—Your feeding of the chicks is unobjectionable, but they die from want of warmth. Keep them in a warm outhouse at night.

GUINEA FOWLS DO NOT REQUIRE TO PAIR, at least, so says our correspondent, "J. GOLB." He states, "I have ten hens and only four cocks, yet have not had one rotten egg." Were not all the eggs laid by four hens?

HATCHING TEMPERATURE (A Constant Subscriber).—It should not be below 100° for more than half an hour, nor above 105° at any time.

FOOD FOR CHICKENS (W. H. Jackson).—We have answered this query a hundred times. Egg boiled hard, chopped fine, and mixed into a crumbly mass, with oatmeal and cabbage leaves, chopped also very fine. Read "The Poultry Book for the Many" as to profitable breeds. It depends upon many circumstances.

CHINESE GOOSE EGGS.—Goose will be glad to know where he can purchase these.

WORK ON PIGEONS (F. G.)—The papers you mention will be republished.

LONDON MARKETS.—JUNE 15TH.

COVENT GARDEN.

A good supply and marked improvement in the trade. The usual consignments from the Continent and west of England reach us in excellent condition.

POULTRY.

Supply and demand increase together. The trade is now quite up to the average of former years.

Large fowls.. 7s. 6d. to 8s. 0d. each.	Guinea Fowls 0s. 0d. to 0s. 0d. each.
Smaller do..... 4s. 6d. to 6s. „	Pigeons..... 8d. to 9d. „
Chickens .. 3s. 0d. to 4s. 0d. „	Rabbits.... 1s. 5d. to 1s. 6d. „
Goslings 5s. 6d. to 6s. „	Wild ditto..... 10d. to 11d. „
Ducklings.. 3s. 6d. to 4s. 0d. „	Leverets.... 3s. 0d. to 5s. 0d. „

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—June 16, 1857.

WEEKLY CALENDAR.

D M	D W	JUNE 23—29, 1857.	WEATHER NEAR LONDON IN 1856.					Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.							
23	TU	Teasels (<i>Dipsacus</i>).	30.225—30.093	69—42	N.E.	—	45 a. 3	19 a. 8	10 19	2	1 51	174	
24	W	MIDS. DAY. NAT. J. BAPTIST.	30.190—30.148	68—55	W.	—	45	19	10 44	3	2 4	175	
25	TH	Scabious (<i>Scabiosa</i>).	30.178—30.159	82—50	W.	—	46	19	11 1	4	2 16	176	
26	F	Bedstraws (<i>Galium</i>).	30.211—30.162	88—56	N.W.	—	46	19	11 14	5	2 29	177	
27	S	Plantain Shoreweed.	30.144—30.030	88—57	S.W.	—	47	19	11 25	6	2 42	178	
28	SUN	3 SUNDAY AF. TRIN. QUEEN	30.162—30.038	82—37	N.	—	47	19	11 36	7	2 54	179	
29	M	ST. PETER. [VICT. CR. 1838.]	30.256—30.189	77—42	S.W.	—	48	18	11 45	8	3 6	180	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 72.9°, and 50.3°, respectively. The greatest heat, 93°, occurred on the 22nd, in 1846; and the lowest cold, 35°, on the 23rd, in 1851. During the period 113 days were fine, and on 83 rain fell.

USEFUL GARDEN GRASSES.

PO'A NEMORA'LIS ANGUSTIFO'LIA.

(NARROW-LEAVED WOOD MEADOW GRASS.)



THIS is a perennial. *Root* fibrous, scarcely creeping. Whole plant very slender and delicate, one foot and a half or two feet high. *Stems* several, erect, slightly flattened, smooth, streaked, leafy, with four or five joints. *Leaves* almost all on the stem, grass green, long, narrow, flat, with three principal ribs and many intermediate ones; more or less rough, especially the mid-rib and edges; tapering to a fine, slender point; the lowermost smooth at the back. *Sheaths* hardly so long as the leaves, flattened, nearly smooth. *Stipula* very short in all the leaves, and inclosed within the sheath, but visibly notched along the margin. *Flower-head* a panicle, erect, or slightly drooping to one side,

very slender, with numerous, half-whorled, angular, rough, wavy, compound branches. *Spikelets* erect, pale green and white, with a purplish tinge, their general surface shining, and nearly smooth. *Calyx* of two unequal spear-head shaped, taper-pointed, almost awned valves, each with three ribs; the keel, or central rib, rough; the margin of the larger, or innermost, much swollen and membranous. *Florets* two or three, rarely four. Outer valve of the *corolla* spear-head shaped, acute, with five ribs, of which the two marginal ones and the keel are finely silky at their lower part, the two intermediate ones smooth, and not very conspicuous unless the glume be held against the light; inner valve narrow, rough-edged, cloven at the point. The base of each *floret* is sometimes, not always, hairy, but there is no complicated web. *Stigmas* large and tufted. *Nectary* of two acute cloven scales.—(*Smith*.)

It belongs to Triandria Digynia of the Linnæan System.

Messrs. Lawson, in their *Agrostographia*, say: "This Grass, as its name implies, is found naturally in shady woods, particularly in alpine situations, and is well adapted for growing under trees, but will also thrive on exposed places, and even on inferior light soils. Its habit of growth is delicate, upright, close, and regular, with the panicles partially drooping or bending when nearly ripe. There is no Grass better adapted for pleasure grounds, particularly under trees, as it will not only grow in such places, but form a fine sward, where few of the other fine Grasses can exist. It produces foliage in abundance early in spring, but grows rather slowly after being cut for seed. From the closeness of its habit of growth, it is found to displace annual and biennial weeds, and also those of more permanent duration, provided it be allowed to run to seed."

VISITS TO NURSERIES.

PINE APPLE PLACE, EDGWARE ROAD, LONDON,
MESSRS. ARTHUR HENDERSON & CO.

(Continued from page 50.)

MR. ARTHUR HENDERSON is the best judge and the best critic on bedding Geraniums of all the nurserymen I know. He first inoculated your humble servant with the properties and pedigrees of that race. We are indebted to him and to his pupils alone for our application of the greenhouse kinds in the flower garden. I think he had only three pupils in this line in 1840, when

I entered my name, and in less than twenty years the system is all but universal in these islands; and the last move, after a serious consultation with him, I shall now lay before you. In the progress of this "movement" we only met with two obstacles which were really serious: one was the carelessness of the old school, which did not desire improvement at the expense of so much bother, and the other lay in the prejudice against massing, or bedding, as we call it. Any thing, or plant, or seed, or subject, could not come amiss for this class of gardeners, provided it came in drops, as it were, and fell indifferently in different parts of a bed or border; but two or more drops of one kind falling in any one place were like the dropsy itself for the skins of their "mixed systems" and "patch plantings;" so we could not get rid of them, nor did we desire it; and now we are in a position to plant the longest border in England, and the largest bed in either Ireland or Scotland, with mixed plants which will flower every day and night from the middle or end of May to the very end of October, and to as long beyond it as the frost keeps off, and all this out of one section of Geraniums. Many of them will do for masses in such places as Shrubland Park, where the soil and system are in their favour; but they are submitted to your notice only as mixed border plants, to come in aid of your Larkspurs, Pæonies, and other principal border plants. Every spare inch between the "herbaceous" plants ought to be filled now-a-days with something more temporary to help out a summer's bloom. One-third of these might very well be given up to Stocks and hardy annuals, one-third to pot Geraniums, and the other third to pot plants of all kinds, as odds and ends from the bedding plants in large places, and half-hardy plants from seeds in the small gardens. The best Geraniums for the middle third are the following:—*Hunt's Seedling*, in the strain of *Lady Mary Fox*, and one of the best winter bloomers; *Ninon de l'Enclos*, a new French thing; *Monte Christo*; *Colei*, after Mr. Cole, nurseryman, near Birmingham, another of the "pupils;" *Virgineum*, the largest white; *Townsend's Seedling*, very excellent; *Gauntlet*; *Crimson King*, the identical Crimson King which the Messrs. Wood and Ingram, of Huntingdon, recently advertised in THE COTTAGE GARDENER, and which seems to bloom all the year round like *Gauntlet*; *Extravaganza* (Mieliez), another of the new French race, which was noted last autumn as "dark maroon, with an even margin of deep rose;" *Don Juan*, which is the nearest to the old purple kind called *Daveyanum*, and far superior to it (this also blooms all the winter if it is properly treated for that "work"); *Fair Maid of Scotland*, a sweet-leaved kind; *Fair Rosamond*, ditto; *Citriodorum roseum*, ditto; *Conspicua*, *Defiance*, *Surprise*, and *Sidonia floribunda*, all of which are new to my book; but I am as satisfied about them as if their character came out of my own mouth.

The following I have proved last year in the Experimental Garden on a mixed border in front of the conservatory, and opposite the drawing-room windows. They are all in this nursery according to our exchanged notes; but they were sent to the Experimental Garden by the Messrs. Henderson, of the Wellington Road Nursery; Low, of Clapton; Kinghorn, of Richmond; and Scott, of the Merriott Nurseries, Crewkerne, Somerset:—*Duchess of Sutherland*, a fine light flower; *Glaucum grandiflorum*, another white; *Bridal Ring*, a small white; *Countess*, nearly white; *Crispum grandiflorum*, a light flower; *Sir William Middleton*, the best of the breed of *Jehu*; *Wilmore's Surprise*; *Alma* (Denis's); *King Rufus*, a dark red; all the *Diadematus*, *Mrs. Standish*, *Pulchellum*; *Lindleyanum*, after *King Rufus*; *Delicatum*, the best for nosegays; *Quercifolium* and *Q. superbum*, *Ignescens* and *I. superbum*, *Rouge et Noir*, *Zonale*, and all

the *Uniques*. The scarlet Unique is of the *Quercifolium* breed, not a true Unique. *Isidoreanum*, *Touchstone*, *Floribunda*, *Pretty Polly*, *Morgana*, *Lady Mary Fox*, *Spleenii*, *Mrs. Jeffries*, a sport from *Spleenii*, and *Sidonia*, belong to *Diadematum*. Every one of these will bloom in any garden most profusely the whole summer, and many of them would flower in winter from spring cuttings if they were divested of the flower-buds, and kept on growing from pot to pot till the end of August, and one plant of each kind would be enough to keep in winter to cut from in the spring for a summer collection in the mixed borders; they are also much superior to the show Geraniums for mixing in flower-baskets on the lawn, or in lobbies, corridors, and staircases, or anywhere about the house. You can buy them by the dozen or score, or by the piece, as cheap as the best bedding plants, and you would be gay the whole season without another pot plant in the garden.

But there are other bedding plants which have been proved here, and which are being sold out this season for the first time, which will be hailed by all the bedding-out classes as real acquisitions. The first of them is a pure *White Zelinda Dahlia*, about two feet or two feet and a half high. I have very favourable notes on it from Mr. Foggo, of Shrubland Park; from Mr. Fleming, of Trentham; and others on whom I can rely, as being under the patronage of very influential ladies in the country. The others are two *Tropæolums* of the *Lobbianum* breed, of which we have *Triomphe de Gand* as the best winter climber. One of these, called *Beaudine*, is crimson, and of the size of *Lobbianum*, flowers all the summer, and climbs to a great height, ripening abundance of seeds, but is kept from cuttings. The other is of the same breed, size, and habit, and is of a canary ground colour, with purple spots in all the petals. The name is *Triomphe de Prado*. They will make fine summer climbers; but they are already marked out for centres to very striking flower-beds; five or six plants of them are to form the centres of eight large circular beds in one of our best flower gardens. They are to be planted in very poor, shallow soil, to be trained to stakes five or six feet high as a centre group, round which a row or double row of *Delphinium Hendersonii* will be planted, or one of *D. Hendersonii* and one of *D. formosum* in front of it; then one row of the new *White Zelinda Dahlia*; and on the outside a row or two of *Tom Thumb* Geraniums. These will be magnificent and very novel beds, four on each side of a beautiful new terrace garden. They have been devised here, and sanctioned and approved of by all concerned, and no doubt thousands will strain a point to have them on knowing that they have been much approved of by THE COTTAGE GARDENER.

There are a score of other sweet morsels to be named from this nursery, but nurserymen themselves have tied my hands in this matter, or rather my legs, and I cannot browse beyond the length of my tether, though the next bite might be of milk and honey. D. BEATON.

STOPPING VINE SHOOTS.

"IN your No. 452 I find in your answer to 'A BEGINNER' a paragraph on the Vine which has not a little startled me. 'A BEGINNER' is afraid that 'by stopping the growing shoots of this season he will start the fruit-buds of next year;' and he is asked in answer if he does not know that the Vine bears fruit on the young wood of the current year. I will venture to say he knows it well, as the veriest tyro must; but his fears are most legitimate, for if he did not judiciously stop the laterals, which he probably calls, though not correctly, the growing shoots, what I should persist in calling the 'fruit-buds' of next year would in-

evitably 'start.' For instance, if he stopped the laterals without leaving an eye beyond the bud at the base, this bud would start, and I think I am justified in calling this the 'fruit-bud,' inasmuch as it contains the embryo Grape; and if all such buds started on a Vine it would bear no fruit.

"I have always been taught to cherish these buds with the greatest care, for unless they be well formed, plump, and well ripened, and unless the large leaf springing from them be well preserved, there would be small chance for the cultivator."—H. S. WATSON.

Our correspondent is perfectly correct when he expresses his confidence that the object of this publication is to "instruct, and not to mystify." I had not the honour to see a letter from "A BEGINNER," and therefore cannot say whether the answer was appropriate or not. Detailed answers are intended to be generally interesting. Such short answers as the one referred to apply chiefly to the particular inquiry. There *does* seem a little obscurity in saying that "he need not be afraid of starting prematurely the buds for producing fruit and shoots next season, by stopping the shoots now on which these buds are placed." The statement is, no doubt, correct, according to the generally received ideas of stopping main shoots or laterals, because, though sometimes a few of the buds may be started prematurely, there will be plenty left behind for the next year's supply; and yet I can easily imagine such a case of injudicious pinching and stopping that the best and plumpest buds might be started into growth, and that growth be very imperfectly ripened for producing fruit the following year.

Without drawings and more time and space than can now be spared I may not do much to enlighten beginners, yet obligation for our correspondent's suggestion ought to prompt to the attempt. Two parts of our correspondent's letter require a passing notice. First, allowing as a general rule, and chiefly when Vines are grown on the rod system, that "unless the buds be well formed, plump, and well ripened, and unless the large leaf springing from them be well preserved, there would be small chance for the cultivator," yet that statement applies, as I have hinted, chiefly to growing and pruning the Vine on the rod system, by which shoots are grown one year to produce fruit the next. The importance of fine healthy foliage and its full exposure to light can never be overrated either by beginners or old practicals; and though I should be sorry to have a fine leaf taken from its attendant bud, which I wished to produce a fruitful shoot next year, I should not sorrow over it much if I had good healthy foliage above it. I have previously mentioned that in the case of healthy, fruitful Vines with their roots near the surface it mattered but little how they were nipped and pinched, provided there was healthy foliage equally diffused over it; for when in the winter time every bud was removed, plump and non-plump, and the main stem left as bare as a walking-stick, that stem from the cut parts sent out shoots from unseen buds so fruitful that more than half had to be removed. I have no wish that beginners should adopt such a system—quite the reverse; but I mention it as a proof that fine fruit may be obtained otherwise than from the *plumpest bud*. I also have frequently had instances of very superior fruit coming on shoots that broke at once from an old stem, where there was no leaf, and no perceptible bud the previous year, the shoot, in fact, starting in some cases from that part of the stem covered with soil. The mode of management most nearly allied to the clean walking-stick system of pruning is that so generally practised under the name of the spur system; but here, again, the cultivator, however he may rejoice in fine foliage, does not depend upon the largest, plumpest buds in the axils of the largest leaves found from the middle to the end of the shoot, but upon the very small, almost imperceptible

buds concentrated at the base of the shoot, the rest of the shoot, with its beautiful buds, being cut away in the winter pruning. Nor does he thus place his dependence on these small buds in vain if the wood has been well ripened, and the whole plant, as in the first instance, stored with organisable material.

In such a case, the fruit being produced on shoots coming from such small basal buds left at the winter pruning, it is customary to nip out the points of such shoots when grown one joint beyond the fruit. This stopping will induce lateral shoots to come there, and between each bud and leaf on the shoot. Encourage these to grow a little if you wish to promote root action. If that is not required, or the foliage would be too crowded, stop them likewise back to the first joint, and then, as the wood begins to harden, remove them gradually altogether. If removed too early, and you prevent the shoot lengthening again at the point, you may start some of the most prominent buds near the point, especially if there is not a heavy weight of fruit; but, unless carried to an extreme, there is no danger of starting the small buds near the base of such shoots, to which, under this system, you would cut back in winter. I should allow a growth of some laterals at first in such a case before the wood began to change colour, not because I valued such buds a bit that were ultimately to be removed, but because their starting would have a tendency to prolong growth, and to waste upon that growth ultimately to be removed those powers of the Vine that should be concentrated upon the swelling of the fruit and the maturation of the wood.

I did not intend saying so much here on stopping on the spur system; but, as it is somewhat applicable to any system after fruit bearing commences, a few more words may render the reverting to it again superfluous. This is the mode I have adopted, and would always adopt, could I by any means overtake such things in time. Having stopped the shoot from the spur-bud one joint beyond the fruit, I would allow laterals to grow a joint or two, and as many of them as would not overcrowd or shade the larger main leaves, just on the principle that, as roots and branches act relatively and correlatively, I thus increase the vigour of the Vine as a whole. When the wood begins to get hard and loses its green colour the formation of small leaves and shoots, instead of increasers, become exhausters of vigour, and retard the maturing by continuing the growing processes. I then gradually remove the whole of the laterals, but not taking away too many at once, and removing those nearest the point first; but I am careful to leave every main leaf as fully exposed as our correspondent would desire. For the fine buds in their axils near the point I have no such tender care, but would rather that the highly organisable matter stored in them was deposited in the lowest bud or the main stem; and, therefore, had I time, like many amateurs, after thus removing the laterals I would also remove the greater part of the buds, doing it gradually, taking a couple or so from the point of the shoot first, whipping them out with the point of a knife, the only care required being that you do not start the lower buds, to which you cut down in winter. Mind, the leaves must not be injured while the buds in their axils are removed. When I have thus done with spur-pruned Vines, and they were otherwise in right condition, I have frequently had an extra superfluity of fertility, the shoot coming from the small bud left at the base or spur in the winter pruning generally showing from three to four or five bunches, one of which only was usually retained.

Our correspondent will now see that whether scooped out in summer or not, the plumpest buds, on the spur system, are invariably removed. I am sure he will forgive me for noticing a second part of his letter, on

the principle that critics should ever be ready to be criticised. "*For if he did not judiciously stop the laterals (which he probably calls, though not correctly, the growing shoots) what I should persist in calling the fruit-buds of next year would inevitably start.*" This statement does appear somewhat mystifying; for, though I can conceive of an injudicious stopping of laterals and the main shoots starting the buds intended for next year, I cannot conceive how any non-stopping could effect that result, though it might lead to one quite as prejudicial—the securing of mere bulk without maturation and concentrated energy.

It would simplify the whole matter to beginners were they once convinced that the luxuriant size of a Vine shoot, in itself an advantage, becomes an unmixed good *only* when that shoot is fully ripened and stored with highly elaborated matter from healthy foliage. Without that full maturation a medium-sized shoot is likely to be more fertile. Take this in connection with the phytological fact that roots and top, stem and branches, act relatively to each other, and it will at once be seen that there are occasions when to promote growth laterals should be encouraged, and when to mature that growth they should be stopped and removed. I have just stated how this should be done in the case of spur pruning. As a matter of order we should have taken examples from the rod system first, as we must have a shoot before we can spur. One or two supposititious cases may help to remove the mystery. Some time ago I attempted to show what mode was the preferable one to follow according to the circumstances of the Vine.

Here is a strong shoot coming from a Vine that it is desirable should grow to the top of the house during the season, and produce fruit during its whole length next season. As it grows every tendril, wiry substance from near its point should be removed, but the point should not be stopped or broken until it reaches nearly its allotted length. Almost as soon as you can see the buds in the axils of the young leaves you will notice a small secondary shoot coming between the bud and the leaf, and that shoot is called the *lateral*. If you wished to increase the size of your main shoot in girth you would let these laterals grow for two or three joints before stopping them by nipping out their points. As the shoot is strong and we wish it to lengthen freely, we stop these laterals in the usual way after they have made one joint, and when they push again we keep nipping them back, and as the main stem begins to change colour we remove them altogether, that more sun and air may play about the principal leaves, from the base of which these laterals came.

But here is another case of a Vine shoot that, owing to the age of the Vine or other circumstances, it is not desirable should fruit for above half the length of the rafter next year, and, as it is coming not over strong, it is desirable that for that length the rod or cane should be as stout as possible, and have plump, well-swelled buds. Now here our practice would be different. Left pretty much to itself, the upper part, provided it did reach nearly the length of the rafter, would most likely be the strongest—that part, indeed, destined to be removed in the winter pruning. To increase the strength of the lower part intended for fruiting the following year I would nip out the point of the shoot when it had grown as far as I wished to leave it at the winter pruning. This stopping would very likely cause two or three buds to start, and of these or a strong lateral I would select one for a leader, very likely to be stopped in its turn as it neared the top of the house. This first stopping would also give an impetus to all the laterals downwards, and these I would encourage to grow from one to three or more joints, just according as there was room. More quickly than by any phytological reasoning a beginner may see the purport of this if he contrasts the slim stem of an Oak

drawn up in a thick plantation, with a broom-head of branches, with the sturdy stem of one of the same height that stands exposed in a park, with branches extending ever so far all round. He will perceive that he may feed the main stem by the lateral branches, as these, again, give an impetus to root action. If of a reflective turn he may notice that, beautiful as is the outline of the park Oak, its trunk would have been more valuable as timber if, by a system of early stopping and pinching, the wood now contained in huge, uncouth boughs, little serviceable as to utility, had been concentrated more in the main trunk of the tree. Even on the forming of the timber material, then, of the Vine stem he would see the futility of too greatly increasing the length or the size of the lateral shoots, though undoubtedly at first they give an impetus to the growing powers of the Vine. The Vine, however, though rejoicing in luxuriance, is cultivated not for timber but for fruit, and its fruitfulness depends on the maturation of the wood, and, in the case and system under consideration, on the plumpness and roundness of the buds, which I would look after as carefully as our correspondent advises. To gain this plumpness of buds and hardness of wood he must prevent the laterals continuing too long, and thus maintaining a languid system of growth, or he may have mere girth of stem at the expense of maturation, and small angular buds instead of round and plump ones. Even these laterals, therefore, must be gradually shortened, and then removed; while, as our correspondent advises, the main leaf from which the laterals came should be carefully preserved so long as it has a tinge of green. For want of this attention to securing maturation we have seen strong shoots—that strength increased by a mass of laterals—that never produced a bunch.

When a fruitful rod produced this season throws out from its buds fruitful shoots next year, then, according to circumstances or choice, you may adopt the spur or the rod system. If the spur, treat the laterals as first spoken of under that head. If the rod system, which our correspondent seems chiefly to have in view, succession rods must be grown each year, and the fruiting spurs cut away as soon as done with. In that case the fruiting shoots should be stopped above the fruit, the same as in the spur system; but fewer laterals will be wanted on these shoots after the grapes are swelling, as the young rods for the following year, and the laterals on them to be treated as last mentioned, will keep up root action. In such a case, as the fruiting side-shoots will be removed in winter, there can be no harm, where there is time, in removing the buds from the axils of the leaves, as in the spur system. We think the buds on the rods will be finer in consequence.

Whatever the mode of culture, provided the roots are right, the foliage regular, healthy, and fully exposed to light, and the wood well ripened, the whole plant is so stored with organised elaborated matter that there will be fruit, pinch and stop as you may. In the rod system, however, secure plump buds, and in all systems be careful of the main foliage.

R. FISH.

THE CRUCIFERÆ, OR CROSS FLOWERS.

From Hogg's Natural History of the Vegetable Kingdom.

(Continued from page 176.)

"**ALYSSIDÆ.**—Unless it be for their botanical or floral interest, there are none of the plants of this tribe which command much attention; and those only which possess any properties recommending them for economical purposes are *Cochlearia armoracea*, the *Horse-radish*, and *C. officinalis*, the *Common Scurvy Grass*. The former, being so well known, requires little or no description. It is highly stimulant, exciting the stomach when eaten, and promoting the secretions,

especially that of urine. It has been recommended in palsy,* chronic rheumatism, dropsical complaints, and in cases of enfeebled digestion; but its chief use is as a condiment to promote appetite, and to excite the digestive organs. The virtues of Horse-radish depend upon a volatile oil, which is dissipated in drying, and they may be imparted to water and to alcohol. The oil, which may be obtained by distillation with water, is colourless, or pale yellow, heavier than water, very volatile, excessively pungent, acrid, and corrosive, exciting inflammation and even blisters on the skin; it is partly soluble in water, to which it communicates the inflammatory properties, and is quite soluble in alcohol; but when the root is distilled with alcohol no oil is obtained. It contains sulphur to the extent of thirty per cent. in the number of its elements, and it is to the presence of this body in Horse-radish that the metal vessels in which it is distilled are turned to a black colour. It is one of the most powerful excitants and antiscorbutics which we have, and forms the basis of several medical antiscorbutic preparations, in the form of syrups, wines, and tinctures. The *Common Scurvy Grass* is also a powerful antiscorbutic. It possesses the greatest vigour when it is coming into flower, for then its leaves are charged with an acrid and pungent juice, which, when the plant is bruised, gives out a volatile and irritant exhalation. Scurvy Grass contains the same acrid, sulphureous oil which exists in Horse-radish, and is almost always applied either with or to the same purpose as that is.

"**THLASPIDÆ.**—This tribe, which contains the little *Shepherd's Purse*, an abundant and troublesome weed in most gardens, presents us also with the gay and fragrant *Candytufts* of our annual flower borders. It does not furnish many plants remarkable either for their economical or medicinal properties, the only instance being *Iberis amara*, or *Bitter Candytuft*, which is a small annual plant common in the corn-fields of this country. The root, stem, and leaves, are said to possess medicinal properties, but the greatest virtue rests in the seed. In large doses it produces giddiness, nausea, and diarrhoea, but its virtues do not seem to be associated with any perceptible physiological effect. It is thought to exercise a happy influence over the excited actions of the heart, and is especially useful in hypertrophy; but much advantage is said to have accrued from it in asthma, bronchitis, and dropsy. The dose of the seed is from one to two grains.

"**ANASTATICÆ.**—The remarkable plant which is the type of this tribe grows in the arid wastes of Egypt, Palestine, and Barbary; on the roofs of houses, and among rubbish in Syria; and on the sandy deserts of Arabia. It is *Anastatica hierochuntica*, the *Rose of Jericho*, which the monks of old invested with such miraculous powers, and which the people regarded with such superstitious veneration. The plant is small, bushy, and not above six inches high; after it has flowered, the leaves fall off, the branches and branchlets dry and shrivel up, incurving towards the centre, and, in fact, forming the plant into a sort of ball. They are easily uprooted from the sand by the winds, and are carried, blown and tossed, across the desert into the sea. When they come in contact with the water the plant unfolds itself, the branches are expanded, the seed-vessels open and relieve the seeds, which are conveyed by the tide, and deposited again on the shore. They are carried hence by the winds away into the desert again, and there they take root, producing plants, which, in their turn, perform the same strange part in the economy of creation. It was to this property of expanding when placed in contact with moisture which induced the miraculous and superstitious importance of the plant, and it was believed that this appearance always took place on the anniversary of the birth of our Blessed Saviour. The plant may be kept for years if taken up before it is withered, and then preserved in a dry room; at any time when the root is put in a glass of water, or the whole plant immersed, it will expand, and, in the course of a few hours, the buds of flowers will swell, and appear as if newly taken from the ground. It is called, also, *Rosa Maria*.

"**SISYMBRIÆ.**—In this tribe we have the pretty little *Virginian Stock* (*Malcoma maritima*), so gay and yet so modest, whether smiling on the window-sill of a smoke-wreathed tenement of our large towns, or edging the approach to some happy home, fragrant with Honeysuckles

and Clematis, in the quiet retirement of a country lane. Here we have also the *White Rockets*, or *Dame's Violets* (*Hesperis matronalis*), and the *Night-scented Rocket* (*H. tristis*).

"*Sisymbrium officinale*, or *Hedge-mustard*, is not so acrid or pungent as the great part of the Cruciferae—its leaves being rather bitter and astringent, and employed in infusion for pulmonary catarrh. The herb is said to be diuretic and expectorant, and has been recommended in chronic coughs, hoarseness, and ulcerations of the mouth and fauces. *S. Irio*, or *London Rocket*, has the hot flavour of mustard. *S. Sophia*, or *Flix-weed*, is of a pungent odour, and an acrid, bitter taste. It was formerly given in dysenteries and hysterical cases, and the seeds were considered as a vermifuge. The seeds, mixed to the extent of one-tenth part of the other ingredients, are said to augment the force of gunpowder.

"*Erysimum alliaria*, commonly called *Jack-by-the-hedge*, or *Sauce alone*, emits from all its parts, and particularly from the seeds, a strong odour of garlic. It was formerly used by the country-people in sauces, along with salted meat, with bread and butter, and in salads; and therefore called 'Sauce alone.' It is found growing by the sides of hedges, and hence the origin of the other name. Although it is now almost totally disregarded, it may be used with considerable advantage. The late Dr. Neill states that 'when gathered as it approaches the flowering state, boiled separately, and then eaten to boiled mutton, it certainly forms a most desirable pot-herb; and to any kind of salted meat an excellent green.'

(To be continued.)

ON SMALL DRONES.

IN our experience in bee-keeping we have never seen a "small drone," that is, one under the common size. There seems, however, to be a belief that there are such, and we think that Huish mentions it. We state this with diffidence, not having his book at hand to refer to. Still we recollect being told by an old friend that he had seen small drones, and that he thought they were bred in the cells of workers. As my friend had had much experience in bees, and was, indeed, a sort of Bonnar, by having kept them in the heart of a large town, we could rely on what he said; but if such be the case it must be of rare occurrence, for the thing seems to be little known. We certainly have seen a queen depositing eggs in the cells of workers, and quickly do the same in those of drones. Now, if she happened to lay an egg to produce a male in one of the former the insect produced from it must be small, for the larva had not room enough for its proper growth. I should state that bees, like all other insects which are produced from grubs, never increase in size after they are perfect insects; consequently all such, however large or small, have their real growth in the larva state; but in the case of the hive bees the cells are so exactly of a size that the insects must of necessity be the same. Not so our wild bees. These may be found in the nests varying in size from that of a pea to the large queen bees, or of more or less bulk according to the different sizes of the cells. We think that what has been said in these pages lately respecting the larvæ of workers producing queens when the cells were enlarged is very much in favour of what we have said of small drones being produced in common cells. However, be it as it may, as this is the time when drones are plentiful, perhaps those who take an interest in the subject will look out for a small one, and secure it.—J. WIGHTON.

RUSTIC FURNITURE.

THE reason why we so seldom see good examples of rustic furniture is because the makers of this sort of work are, generally speaking, a set of miserable incapables. Take a turn anywhere about the suburbs of London at this season, and you will see here and there on the roadsides little collections of lop-sided, splay-footed, bandy, bow-legged, and broken-backed specimens of tables, baskets, garden seats, and little vases at the top of broomsticks, from any hundred

of which a man of taste would find it difficult to select a single specimen that he could pleurably put to use. Having no sense of propriety these carpentering geniuses work by the rule that to be *rustic* a thing must be *ugly*—the uglier the better. They see beauty in swelled knees and cork-screw legs; they have yet to learn that a few rough loppings and gnarled branches are as capable of symmetrical arrangement as if they were polished mouldings of satin-wood. But the customers are most to blame, for I suppose they do find people to admire their zigzags. What is there that somebody with more money than wit will not admire?

But there are exceptions. Now and then we meet with genuine rustic work, combining quaintness with design and utility with both; and when one turns into a yard stocked with the productions of a man who can enter into the idea of rustic work one feels inclined to purchase everything, even at the risk of bankruptcy. Folks who live Tyburn way have in their vicinity a man who is a master of this art. His name I do not know, but his work I remember to have once inspected with a strange consciousness of "water in the mouth." At Brook Street, Upper Clapton, is another—a thorough genius in the construction of arches, fern mounds, baskets, summer-houses, garden chairs—splendid things!—at least thirty per cent. of them worthy to be engraved as examples. His name is Curry. May he live for ever!

At the Birmingham Poultry and Cattle Show I saw on the stand of the Messrs. Dickson, of Chester, a pair of rustic vases of the chastest design and most perfect workmanship. They stood some three feet high, and each had in it a healthy specimen of *Araucaria imbricata*, merely dropped in to give effect for the time. Messrs. Dickson thought very little about them; but I, as a Londoner, accustomed to the abominations of London rusticity, thought a few hundred such would meet with a ready sale in the metropolis. If any Chester correspondent, or even Messrs. Dickson themselves, would send a sketch for THE COTTAGE GARDENER it would prove to be one good contribution to this neglected department of garden ornamentation.

There is one matter of great importance to every one who dabbles in rustic work, and that is a proper choice of wood for the purpose. Oak is the leading material with most makers. It is gnarled and knotty, picturesque even to the last chip; but in my experience I have found it the very worst of woods when exposed to the weather. The summer sun searches into every fibre, and soon makes a ruin of any piece of furniture constructed of it, and it gets worm-eaten to such an extent as to resemble the bottom of a colander, and at last falls to pieces. Others may give a different verdict. The Oak I have had has usually come from Epping and Hainault forests, and it really is a most miserable material. For tables and blocks of any kind that are required to be ornamental there is nothing better or more beautiful than Yew. It may be either varnished or polished, and either way its colour and veining are admirable, and it lasts for ever. For smaller work, and especially for the pet of baskets or other uses where light timber is required to come in contact with the soil, there is nothing better than the Locust tree, or false Acacia, a wood that proves brittle and chippy in all ordinary carpentering, but which never parts with its bark, or yields to the influence of moisture. For trellises to rustic arbours the crooked loppings of old Apple trees are especially commendable, and every lover of a garden should, at pruning time, see that every suitable stick of waste timber is put aside for such a purpose—if not for his own use, then for that of somebody else who may need it. The hatchet makes short work with many a goodly pile of picturesque timber that would be inestimable for rustic work, but as it is generally somebody's perquisite it goes directly to the fire.—SHIRLEY HIBBERD.

QUERIES AND ANSWERS.

NOSEGAY GERANIUMS.

"At page 383, Vol. XVII., of THE COTTAGE GARDENER, I find Jackson's variegated crimson Nosegay Geranium is recommended as being one of the best of the variegated kinds for bedding. As I am a great admirer of this Nosegay section of Geraniums I shall be glad if you can assist me in

procuring a plant of it, as well as some of the non-variegated sorts of this class. The old salmon or pink and crimson Nosegay are the only varieties that I have ever seen. The former I have discarded as unworthy a place in my garden."—R. L.

[There is no such name as you state in any page of THE COTTAGE GARDENER. There is no such plant as a *crimson* variegated Nosegay. A plain crimson Nosegay is one of the very rarest plants in England we have seen. You may have seen the name in a list (in whose catalogue?), but you did not see the flower in a London nursery that we know of. We saw two dozen of seven-year-old plants of *Mrs. Vernon* sold the other day at a sale for thirty shillings. That was the second Nosegay seedling for the previous eighty-six years certain, and perhaps the only Nosegay but one during the last century and the former part of the present century. This and *Frewer's Nosegay* and three *Fothergillii* are all they grow at Shrubland Park, and there is another dark red Nosegay at Trentham. These, with *Jackson's Variegated Nosegay*—a provisional name by the way—are all the Nosegays that we know of in the nurseries; but we cannot undertake commissions to procure them, and we know that a superior race of Nosegays is now being *proved* under competent judges.]

SPOT IN GERANIUMS.—SPRING FLOWERS IN IRELAND.

"I beg to inclose a leaf, and pray let me know what has come over my Geraniums, as they have many of their lower leaves damaged like this one, and, in consequence of their having tumbled off, the plants look dreadfully *leggy*, though it has not interfered much with their flowering.

"As there has been lately a good deal about spring flowers and the cultivation of our indigenous plants in your periodical, I think you may, perhaps, like to hear that something has been done in that way even in these remote districts (Ballymahon).

"In the garden of our village doctor there is at present as beautiful a bed as any one could wish to see, a moderate-sized oval, the centre filled with the lovely *Veronica chamaedrys*, surrounded by a belt of the golden *Lotus corniculatus*. Visitors are in raptures with it, and the doctor, who is a 'cute fellow, gives the Latin names when asked about the making of the bed, but does not let on as to its wild origin, which no one ever thinks of suspecting.

"In early spring he had several of the beds in the garden surrounded with broad belts of the common Primrose, which he afterwards threw away as other things came in. One of these beds was filled in the centre with a very large purple *Auricula*, and one was in concentric rings of the wild Violet and Primrose. The doctor is a thorough gardener heart and soul, and whenever he is not engaged in his onerous duties is to be found among his plants.

"He is not a florist, and I fear that he would fall greatly in the estimation of Mr. Turner if that gentleman heard him descanting on the absurdities of *floristic requisites*; but he has a choice collection of native wild flowers: a florist would turn up his nose at them.

"I saw last year with him the *Bee Orchis* quite at home in a corner of his rockery, and in a damp, boggy corner of the same, at the foot of a huge gnarled block of bog Oak, a mass of *Pinguicula*, one of the loveliest of our wild flowers, but very hard to manage.

"I could tell you more about this village Hippocrates; about his greenhouse, twelve feet by six feet, and the number of beautiful things in it; about his stove and his Orchid house, this last only eight feet by six feet; and yet I saw in it this day the following plants vigorously grown and beautifully flowered:—*Aërides odorata*, *Cattleya violacea*, *Cypripedium barbatum*, *Epidendrum inversum*, *Oncidium papilio*, *O. flexuosum*, *Vanda furva*, and no end of *Gloxinias*."—ITALICUS.

[You have the "spot," the most destructive malady to which Geraniums are subject, and exactly similar to the Potato disease in this respect, that no one is able to tell the cause of it, or know how to cure it. All kinds of quackery, scientific and *lumphitic*, to coin an expressive term for the occasion, have been advanced to cure and tell the cause of

the "spot," but we really know nothing of the cause or cure here in England. Why not ask the good doctor? The only real way to get rid of the spot is either to burn the plants, smash the pots, and fumigate the greenhouse with flowers of brimstone (for it is more "catching" than the cattle murrain), or strip off every affected leaf, and plant the Geraniums on a cool, rich, shady border early in June, going over them once a week to pick off the bad leaves, and by the middle of August the tops will have grown out of the spot, and may very safely be made into cuttings; but unless the poison, or whatever it is, is got rid of with burnt sulphur, or fire, or water, it will return in the spring.

Pray let us hear more about the doctor. Ask him how he manages to have the bed of that Veronica in flower with the native Lotus. With us the Lotus is three weeks later than the Veronica. The Lotus has the very best style of growth for an edging. The doctor is quite right about the florists; they are, indeed, a sad tease to the flower gardeners, for they spoil everything they can lay their fingers on. Have you not the two British Butterworts in Ireland? *Pinguicula grandiflora* is not at all difficult to grow on the shaded side of a Rhododendron bed, while very few British gardeners can manage *Pinguicula vulgaris*. Mr. Jackson's Orchid grower here manages the *Drosera rotundifolia* from Wimbledon Common as he does the alpine Orchids, and no plant can do better. In the Highlands the *Drosera* and *Pinguicula vulgaris* are almost always found growing together. Let the doctor, therefore, give a trial to both in his Orchid house. That the same treatment will do for a Scotch and a Canadian plant as suits *Anæctochilus*, from the hottest groves in the Indian Archipelago, is, indeed, a very curious fact, and well worthy of such a "cute" man as the village doctor. Tell him we drank his health the evening we had your letter.]

PRUNING A WALL PEAR TREE.—VINES NEAR LIVERPOOL.

"I have a horizontally-trained Jargonelle Pear tree on a good wall with a due south aspect. Its present number of branches is three on each side of the leader. In addition to this another branch has started at the right distance from the next lower branch, and promises to be a good branch; but I should like to have a corresponding branch on the other side, but there does not appear to be any buds. At the same time this year that the other branch started another branch started from the front of the leader, which would have just done for a corresponding branch to the other had it been at the side. When it had grown about six inches I cut it down to the last leaf, which was about half an inch from the leader. I wish to know whether that leaf, which is on the right side for the branch I want, can be made by stopping the central leader, a lateral branch, so as to keep up the figure of the tree; also whether an *Easter Beurré* Pear, trained for a wall, will grow on espalier rails with a south aspect.

"Would there be any chance of success with a Vine in this quarter, the southern part of Lancashire? The spot where I would have it is a wall of a house fronting due south; it has the sun on it from seven o'clock in the morning till five in the evening. It is well protected from the east, north, north-west, west, and south-west winds. The only quarter to which it is at all exposed is the south-east, and from this it is protected by a hedge at the distance of four yards."—J. S.

[You did quite right in cutting in the foreright shoot, and there is no doubt you will find the eye break again, and may possibly furnish you with a horizontal shoot; but we should have much preferred to develop the bud on the opposite side, even if it had not been in the same line as the one you already have, because you could easily take it up with a curve to bring it in a line with the other, wherever it might have been; but to secure this you should shorten the leader about one-half. An *Easter Beurré* will do very well on an espalier with a south aspect. We certainly would not recommend so favourable an aspect to be occupied by a Vine in the south of Lancashire, seeing it might be so much more profitably employed either with a Peach or a Nectarine. You can never expect to get Grapes worth eating.]

VARIEGATED ARCHANGEL BALM, LAMIUM ALBUM.

"Last year I sent you a small specimen of the Variegated Mint, and recommended it to your notice. You were pleased to approve of my recommendation, and you have since then been the means of rendering it quite a popular plant, and of introducing it into hundreds of gardens where it was unknown before.

"I venture once more to recommend a plant to you, in the hope that I may again prove useful to my gardening brethren. I cannot say that I can this time make my recommendation with the same confidence that I did before; but still I think the plant is one which your practised eye will recognise as not unlikely to prove useful and ornamental.

"It is, I believe, a *Lamium*. I saw it first in the garden of a neighbouring baronet many years ago, but at the time did not think much of it, and had almost forgotten it until last summer, when the sight of a dried specimen brought it to my recollection. There are two varieties, one with reddish, the other with white flowers. The variegation varies very much. In some it is of a golden hue, in others quite silver. In striking it from cuttings (which is done most readily) it loses all its variegation and becomes a self. I think that it makes a very nice edging, is quite hardy, grows anywhere, and is one of the easiest things in the world to raise from cuttings. In the hope of your giving it a trial in your experiment ground I send a small plant rooted. You will find the variegation grow much stronger with exposure to the light."

—A YORKSHIRE CLERGYMAN.

[We once had a summer-house of blocks and roots of trees covered with this very plant, and we can sustain our reverend correspondent in saying that it is well worthy of being used and tried for edgings and for rockwork. It is often called the Archangel Balm, being a native of every parish in the kingdom in the green-leaved form. It is the *Lamium album* of our books, but the red-flowered is just as common as the white. The variegated form is scarce.]

WAR BETWEEN A PARENT HIVE AND ITS COLONY.

"My bees seemed about to swarm, but the event was deferred for a few days, when a very heavy swarm came out and settled very well. Ten days after a second swarm from the same parent hive was taken, and all settled. Four or five days after I found about a pint of dead and dying bees near my first swarm; in a few days many more; and yesterday the buzz was so loud that I prepared to take another swarm, when, after half an hour's bustle, all became quiet, but some hundreds of dead and dying bees were on the ground before the hive of the first swarm. As I watched the whole time I observed the parent hive to be equally agitated. The two hives are side by side."—S. W.

[You appear to have placed the swarm too near the parent stock; the bees of the swarm most likely have, in consequence, flown by mistake to the hive to which they had been accustomed, and this has led to fighting between the families. It may not be well now to attempt removal, but a board on edge might be placed between the hives in such a way as to make a more complete separation.]

CROSSED TROPÆOLUM.

"I wish again to trouble you to publish your opinion of those Indian Cresses inclosed. The creamy buff, or largest bundle, is a seedling of the same habit and hardiness as the common *Tropæolum*, but does not grow so rampant. I send a bloom of the *Triomphe de Prado* (a foreign sort) to compare. In its habit of growth it is more inclined to be a runner. I like my own variety even better—it is more generally useful. I have some of them in fine bloom now in pots, and they look beautiful. I put, or rather, plant them all out in the small pots; it keeps them more compact in habit, and they flower better. I put one plant in a patch at the back of the flower borders. I should have mentioned that I form a small circle of stakes one foot and a half or two feet through, and three feet high at most. I plant alternately the two distinct

varieties sent. The variety with the dark foliage I call Brilliant; it grows about the same height as the buff. Please describe the colours of these two seedlings, and you will much oblige. I have not as yet seen any varieties of the same habit and appearance. I have several seedlings just now showing bloom of the *minus* var. crossed with others, with the view to get some varieties still more dwarf. If they turn out well I will send some for inspection."—WILLIAM MELVILLE, *Dalmeny Park*.

[These two seedlings of *Tropæolum majus* are very striking, and quite different from the new continental kinds in the Pine Apple Nursery, which are between *T. minus* and the breed of *T. Lobbianum*. The creamy buff is flaked with crimson. *Brilliant* is a rich dark crimson. That name is pre-occupied, however, in Mr. Arthur Henderson's catalogue, and has been in type at our printer's above six weeks waiting for room until to-day. This should be called *Royal Crimson*, or something like that. We have all the new seedlings from the Continent which appear to be from *T. minus* and *Triomphe de Gand*. *Brilliant* might be said to be a summer-flowering variety of *Triomphe de Gand*, and Mr. Melville should get it, and cross it with his new crosses also.]

IMPLEMENTS AND OTHER CONSTRUCTIONS SUITED FOR GARDENS.

EXHIBITED AT THE HORTICULTURAL SOCIETY'S SHOW
AT CHISWICK.

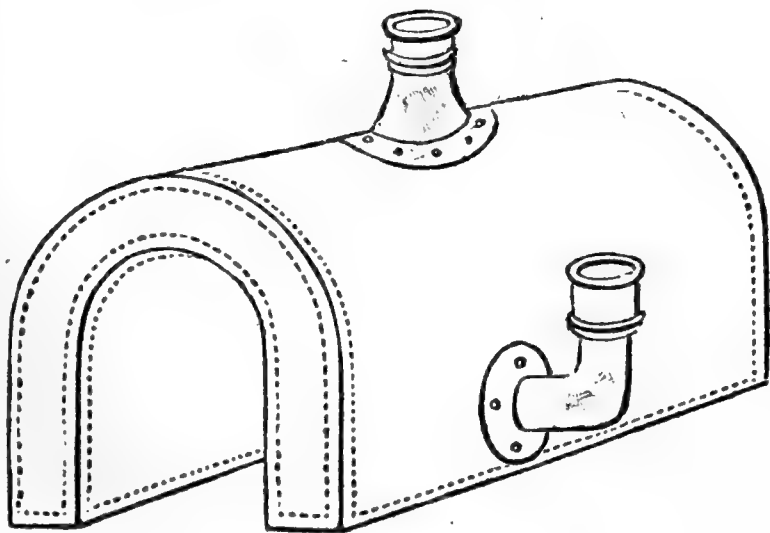
THIS was a novel yet very important portion of the Chiswick Exhibition, and if we wished to point out a prominent demonstration of the superior good sense of the present Committee over that of the Committee which sat benumbed over the Society's decline, we would point to this exhibition of manufactured articles for gardeners. There were here assembled together suitable articles of all kinds, from brooms up to greenhouses, and the visitors we noticed pondering over their merits, and the communications we have since received, assure us that though some exhibitors may be disappointed at not reaping an immediate harvest, yet that the Exhibition eventually will produce a recompense to every exhibitor of anything meritorious.

We wish to have our report illustrated, and shall notice those first and principally who furnish us with the promised wood engravings. We shall also avoid strictly giving any opinion upon the comparative merits of the articles exhibited. If we think an article exhibited by A. good we shall say so, but we shall not say we consider it better than B.'s, and for this valid reason—no one is justified in giving such an opinion on comparative merits unless he has been able to submit the competing articles to carefully-conducted and fairly-balanced experiments.

BOILERS AND HOT-WATER APPARATUS EXHIBITED BY
MESSRS. T. & C. HOOD,

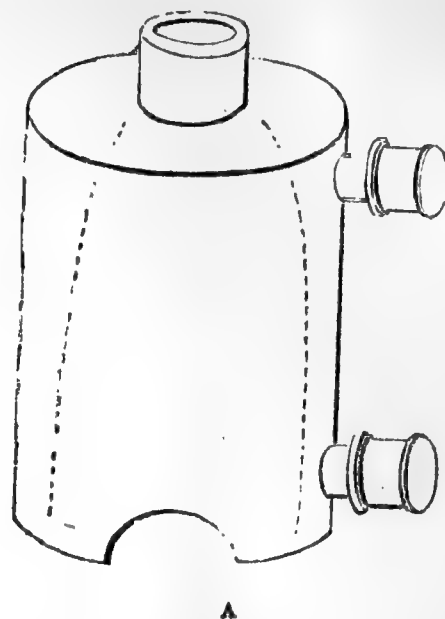
Wholesale Manufacturers of Hot-water Apparatus, Iron Wharf,
Earl Street, Blackfriars, London.

Wrought-iron Arched Boiler, with furnace fittings. All sizes, from 18 inches to 12 feet long. To heat from 50 to 5000 feet of pipe.



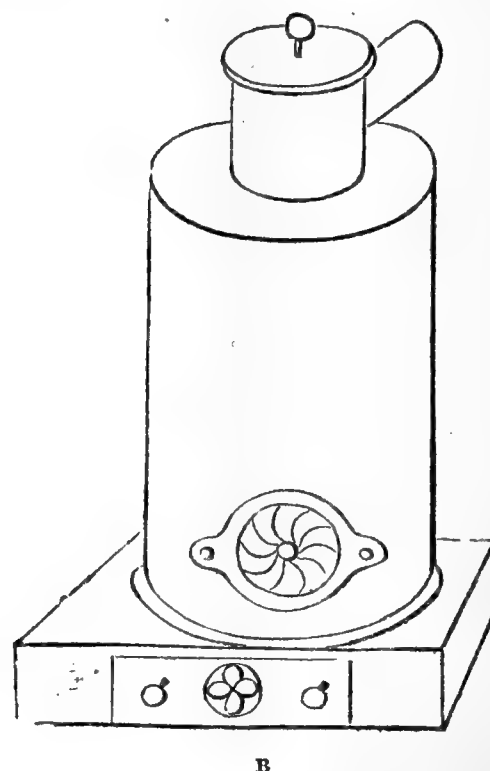
The same may be had of cast iron, of all sizes up to 30 inches long.

Cast-iron Conical Boiler (A), with furnace fittings. All



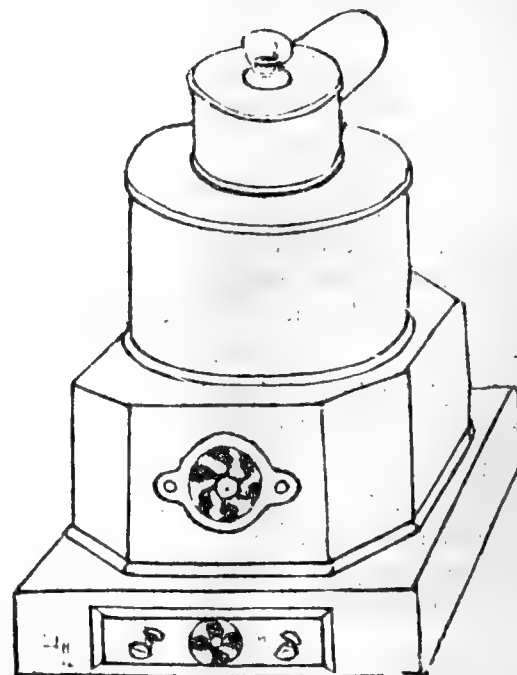
sizes, from 15 to 24 inches diameter. To heat from 50 feet to 400 feet of 4-inch pipe.

Cast-iron Conical Boiler on stand (B), and not requiring



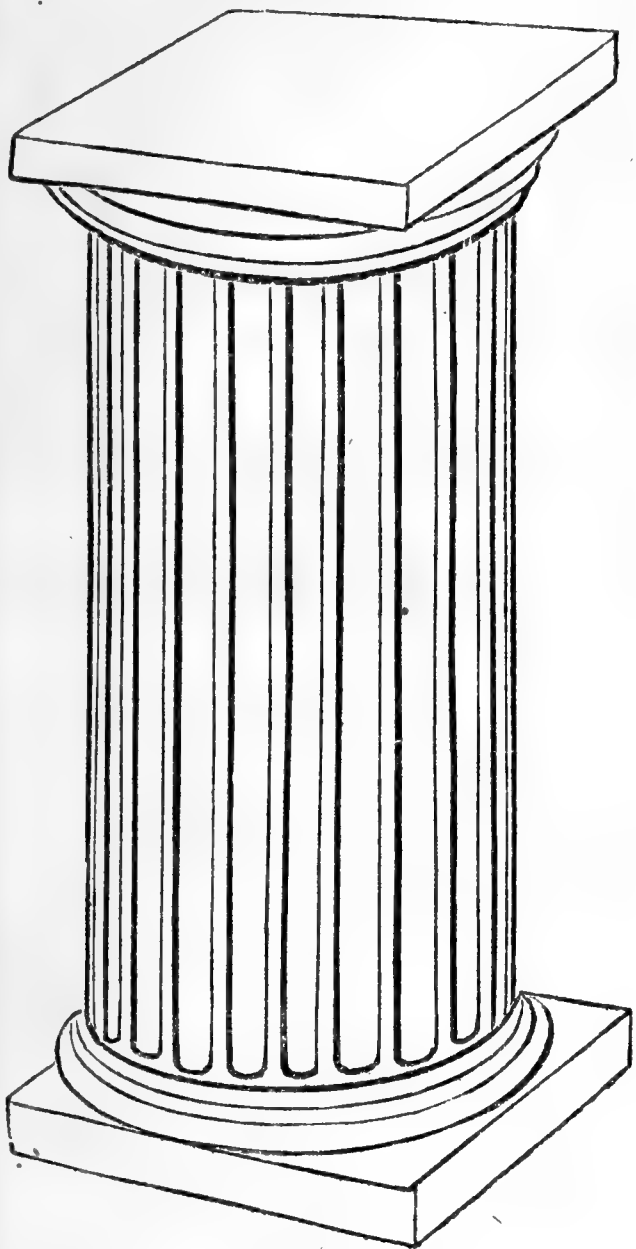
any brickwork whatever. Made of various sizes, to heat from 50 feet to 350 feet of 4-inch pipe.

Cast-iron Conical Boiler on stand, with fire-clay furnace,

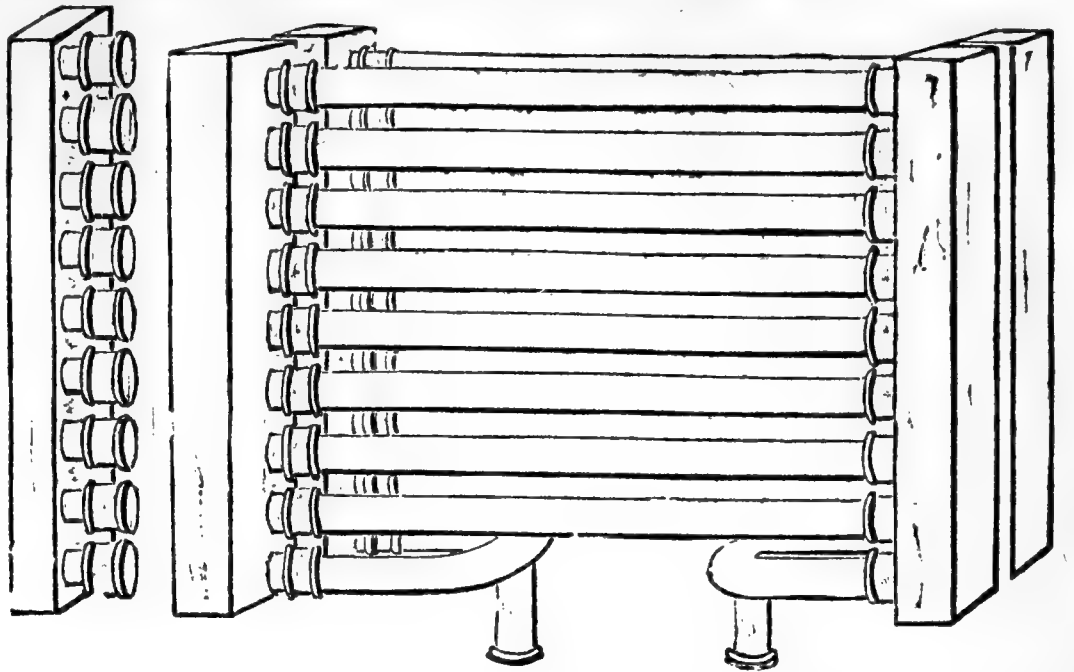


and not requiring any brickwork. These boilers can be used for the smallest description of hot-water apparatus, and will burn steadily with as little as 25 feet of pipe if required.

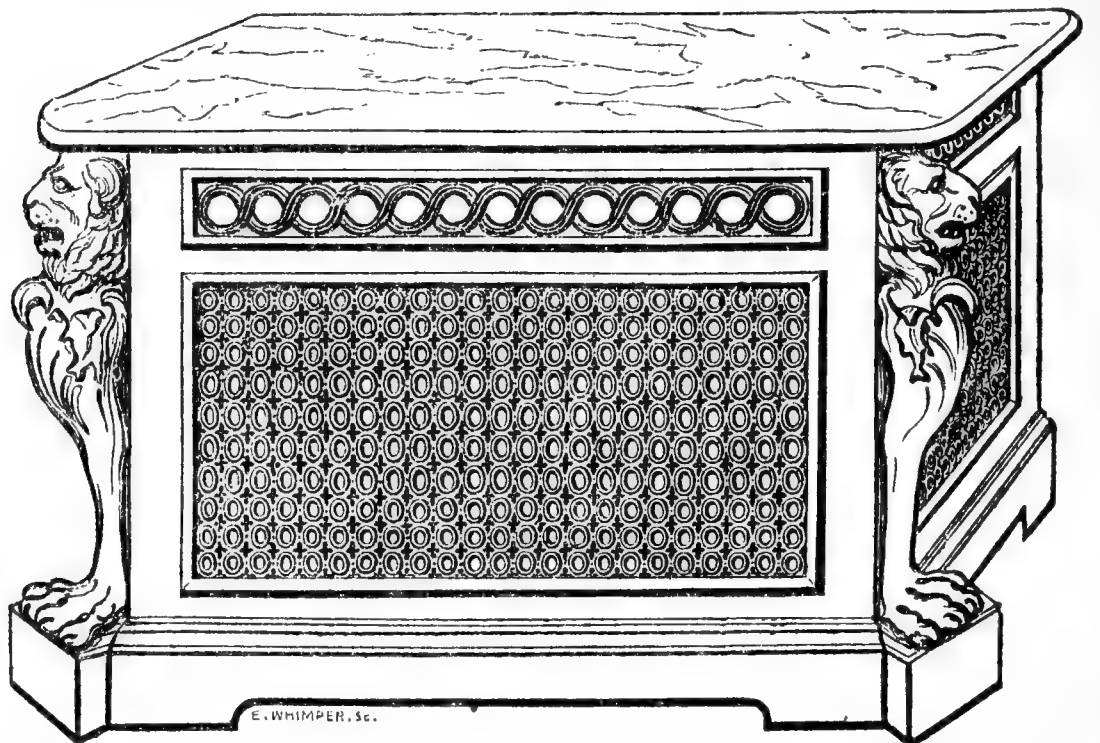
Hot-water Column for heating Conservatories, Halls, &c. They are made of various sizes, from 4 feet to 7 feet high, and contain from 40 to 90 square feet of heating surface.



Hot-water Coil for heating Conservatories, Halls, &c. Made of various lengths and heights, from 2 feet to 12 feet long.

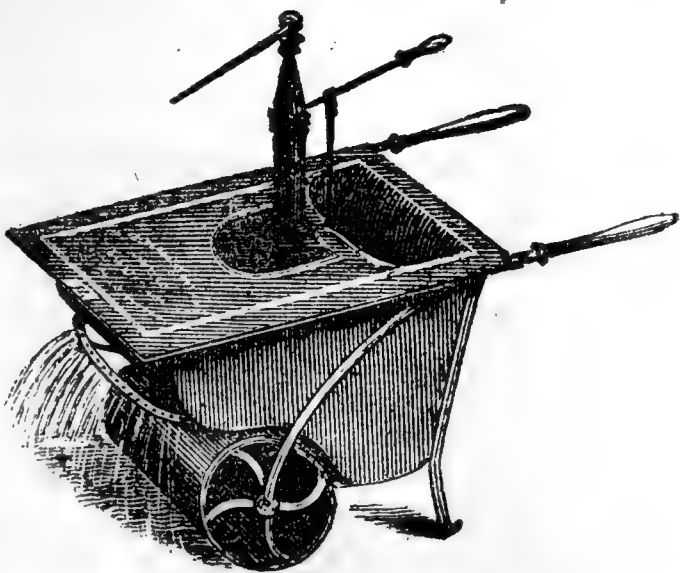


Ornamental Coil Case to cover hot-water coils. Made of all sizes and of various designs, for Conservatories, Halls, &c.



The leading rule for the construction of all boilers is to obtain the greatest amount of surface exposed to the fire without increasing the cost of the boiler so much as to be not compensated by the fuel saved and the rapidity of heating gained. We think the saddle boiler obtains this much-desired result. It must also be remembered that a simple-formed wrought-iron boiler is easily repaired.

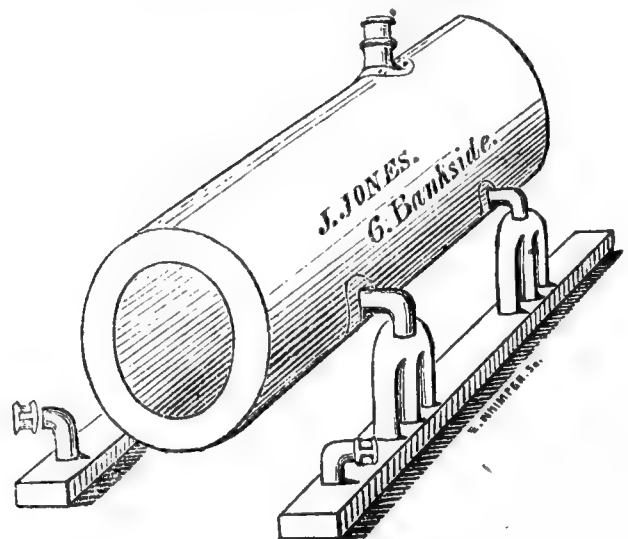
GARDEN WATERING AND ROLLING ENGINE.—Made by Mr. J. Dove, 17, Exmouth Street, Clerkenwell.



The advantages of this neat little Garden Machine may be seen in not only throwing water a distance of about sixty feet, but of watering and rolling grass or gravel walks at the same time, so that while two wheels would in either

case be injurious, this roller absolutely does good, and is so portable that any ordinary domestic may use it.

MONRO'S CANNON BOILER.



This is the invention of Mr. J. Monroe, gardener to Mrs. Oddie, Colney House, near St. Alban's. He describes it as a horizontal, cylindrical, wrought-iron boiler, with tubular supports and pedestals, combining the advantages of the cylindrical, tubular, and saddle-back boiler. Mr. Monroe has now sold all interest in his invention to Mr. Jones, Iron Merchant, Bankside. This, also, seems to attain the objects to be aimed at in the construction of a boiler. It exposes a very large surface to the fire, and is not expensive.

(To be continued.)

NEW BOOK.

BREAD.*—We recommend this little volume to all who wish to know how they can make at home each kind of good wholesome bread; for they will learn from its pages how very little difficulty there is in effecting this most desirable end—desirable not only for pleasing the palate, but for preserving the health of the community. Like Miss Acton's *Cookery Book*, it is the best work which has appeared upon the subject of which it treats. Nor is the work confined to the mere details of manufacturing bread, for there is a history of its preparation from the earliest times, and warnings against its adulterations. We wonder how few bakers' shops would be without their proprietors being fixed to the door-post, if, as in China, fraudulent bakers were nailed to them by the ear; or how often our churches would be without a baker penitential procession if the following procedure was adopted as described by Miss Acton:—

"Formerly in France, when the infliction of heavy fines proved insufficient to prevent dishonest practices on the part of the bakers, the following modes of punishment were resorted to. In one or two instances, if not more, the offenders were condemned to be 'whipped naked at the cross roads;' and in 1521 four of their number were sentenced to be taken by the police from the *châtelet* to the porch of *Notre Dame* bare-headed, and each one carrying a taper two pounds' weight, 'there to beg pardon of God, of the King, and of Justice, for the frauds which they had committed in the fabrication and in the deficient weight of their bread.' This done, they were to be conducted into the church, and to offer their tapers to be burned in it; they, in the meanwhile, exhorting all other bakers to make their bread of the weight and quality required by law, 'on pain of being scourged.' This sentence was strictly executed. At subsequent periods many other well-deserved punishments of various kinds were inflicted for similar offences. At the present day the penalties incurred by the defrauders are fines and imprisonment. In England the law deals even more leniently with such culprits, pecuniary loss being the only punishment allotted to them."

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

THE Annual Dinner of the GARDENERS' BENEVOLENT INSTITUTION was held at the London Tavern on the evening of Monday, the 15th inst., Mr. Sheriff Mechi in the chair, supported by Mr. H. G. Bohn, Mr. Sheriff Crossley, Mr. Roupell, M.P. for Lambeth, Mr. Robert Wrench, &c.

The room was brilliantly decorated with a great profusion of flowers, consisting chiefly of Geraniums supplied by Mr. Turner, of Slough, which occupied the whole stage behind the Chairman, and completely filled one end of the room. At the head of the table were some beautiful exotics, principally Orchids, sent by Mr. Veitch, of Chelsea, which delighted by their elegance and beauty, no less than by their fragrance.

After the dinner, which went off remarkably well, the Chairman proposed the usual loyal toasts—"The Queen, Prince Albert, and the rest of the Royal Family,"—"The Army and Navy,"—"The Houses of Lords and Commons."

SHERIFF MECHE, in rising to propose the toast of the evening, said that there was great selfishness in human nature; those who were blessed with much were too much disposed to look to and study their own comfort, and forget that they had a duty to perform to others, and hence it was that institutions such as these were formed. It is too much the case that when our gardeners become old and enfeebled we cast them off, as being of no further use to us, much in the same way as we would an old horse to the knacker's; but some do not even treat their old horses so. He urged that it was our duty to consider the misfortunes of others as we would our own, particularly of those who contributed so much to our wants

and pleasures. Some gentlemen object to these dinners, but he (Mr. Mechi) thought that what was a productive source to a charity could not be a bad thing. "After long observation," he said, "I have found that a dinner in connection with a charity is an essentiality. I knew a charity once whose officials thought they would save money by giving up their dinners, and in lieu of it send round a subscription paper. They tried it once, and after the subscription paper was sent round they found the sum contributed was £3 13s." He strongly urged that the dinner should not be discontinued, but that the institution should keep up its connection with the City of London, where the Chancellor of the Exchequer and all who wanted money were forced to come. He concluded by drinking "Success to the Gardeners' Benevolent Institution."

MR. ROUPELL, M.P. for Lambeth, proposed "The health of the Chairman," who he said had become public property, and it was not necessary to beat about the bush with any remarks he had to make upon him. He had observed when abroad that there was no fruit like English fruit, no flowers like English flowers, and no agriculture like English agriculture, and it was to Mr. Mechi that the latter was in a great measure indebted for what it now was, and he trusted that the time would soon arrive when Mr. Mechi would take his seat in the House of Commons, which was his fitting place, so as to be the true representative of British agriculture.

MR. MECHE, in returning thanks, said that when he began to improve his own property he had no idea he was going to make so much noise in the world. At the time the food of the country was running short he wrote to some of the agricultural papers explaining the mode of procedure he had followed on his own land, and he was quite inundated with letters from some of the most eminent agriculturists, so that he had no alternative but to go on in the course in which he had begun; "and now," said he, "I have fought the battle and won it."

MR. SHERIFF CROSSLEY proposed "The health of Mr. Wrench, the Treasurer," who replied in a very neat and appropriate speech.

THE CHAIRMAN then proposed "Success to the Horticultural Society of London," coupled with the name of Mr. H. G. Bohn, a Member of Council.

MR. BOHN said that the Horticultural Society had come through a great struggle, but he thought that now light had begun to dawn upon it, and that it would yet be as great as ever it was. He had taken a very prominent and active part in the resuscitation of the Society, and so long as he saw that there were abuses existing which checked its onward progress he was determined he would use every effort to have them removed.

Several other toasts were proposed, among which were "The Stewards;" "Mr. Cutler, the Secretary," who replied in appropriate terms; and "The Ladies."

In addition to the other attractions the gallery was filled with ladies, to each of whom a handsome bouquet was presented, and who formed an *ensemble* which harmonised admirably with Mr. Turner's floral beauties at the opposite end of the room.

TO CORRESPONDENTS.

ZINC PIPES FOR HOT WATER (F. G.).—We have no experience as to their lasting for such purpose. We think that their great expansion and contraction would very soon render them leaky.

WASHABA WOOD (F. G.).—Can any of our readers tell us the name of the tree which produces this wood?

GAS COKE (R. W.).—If anything, there is less gas left in this coke than in the oven coke. You may use it safely for flue-heating. We have used it ourselves for years.

APPLE TREE (Ayr).—It appears to us that you have cut off all the spurs which were on the tree, as there can be no reason for supposing that the tree is dead. *Court-pendu-plat* is perhaps the latest of all Apples both in blooming and coming into leaf, and we have no doubt that by the time you read this you will see indications of vitality. The numbers had fallen from the plants you sent for name, and we could not distinguish to which they belonged; but the white flower is *Podo-phyllum peltatum*, Duck's-foot or May Apple; but the other is too imperfect to be recognised.

NAMES OF FERNS (Caroline).—No. 1, no doubt, is a varied form of *Dilatata*, which varies very much. No. 2 is a variety of the *Athyrium*, something in the way of *Athyrium latifolium*. No. 3, *Adiantum pubescens*, a hardy greenhouse species.

* *The English Bread Book for Domestic Use*, adapted to families of every grade, containing the plainest and most minute instructions to the learner, &c. By Eliza Acton, Author of "Modern Cookery." London: Longman and Co.

BEES FLYING TO A NEIGHBOUR'S GARDEN (S. C.).—It is quite as impossible to account for the bad taste shown by bees as it is for the bad taste evinced by human beings. Some men seem to prefer women whom all the rest of the world consider very disagreeable; so your bees leave the flowers of your beautiful garden for another place where you "could see nothing very tempting about the premises." Every bee-keeper meets with similar occurrences, and we do not think your neighbour does anything to entice the bees.

WORK ABOUT BEES (J. Brown).—You say you have "Bee-keeping for the Many," and need a larger work on the subject. Buy Mr. Taylor's "Bee-keeper's Manual." It is the best book on the subject. It is published by Groombridge and Sons.

PEACH TREES UNDER GLASS (W. Gribble).—Six inches from the glass will not be too far from it; we should prefer nine inches.

HEATING A PROPAGATING HOUSE (A Constant Reader).—See an article lately by Mr. Fish on growing Pines by a flue alone. There is nothing to prevent your plan answering if rightly managed. If the house is used for the purposes contemplated, of course the plants on your stands must be chiefly tropical ones. We presume you mean to confine your propagating and Melon growing to the front of the house, for Melons must have unobstructed sunshine, though in sudden changes from shady weather to sunshine they may require a little shade at times. A large iron cistern placed on the top of the flue as you mention would give out a great amount of vapour. If a small boiler was placed not on the flue, but over the fireplace, and the flue otherwise left as it is, and a pipe of some feet in length from the boiler with an open end for diffusing the steam and heated vapour into your double chamber, you could command moist bottom heat at will, and by means of plugs let it into the atmosphere when you like. Such a boiler would require to be furnished with a cistern and ball tap to keep it always supplied. The cistern would be simpler; a smooth, concrete bottom for your chamber, so as to be pretty well waterproof; and pouring water among the rubble simpler still. For a largish house so to be managed by a flue we should, however, prefer a small common boiler over the fireplace for generating steam; and, provided the chamber is any size at all, there will be no danger of the steam being over hot.

MEALY BUG AND THRIPS (M. J.).—The very best advice we could give you would be to clear the place of the infected plants. Thoroughly scrub every place with soap and water; remove every living thing out of the place, and, lest an insect should escape in a cranny, shut the place up, and burn in it flowers of sulphur, letting it remain shut a couple of days; then open for as much more, and commence afresh. "M. J." could never have read attentively the advice so often given, or he would have known that when plants are *completely infested* with such vermin their constitutional vigour has become so impaired that attempts to remedy the evil are in general so much time, labour, and money lost. If any one wishes to succeed in plant culture he must destroy insects whenever the first one is seen—not after they have had time to colonise and take possession. "M. J." will find information in No. 374, and fuller details in previous volumes. Meanwhile, if he wishes to experimentalise, and even succeed, if the plants are not quite so far gone as he says, collect a quantity of young Laurel shoots, bruise them between a mallet and a stone, and put a bushel of them into a four-light pit; shut close for several hours, and then give a little air. Or smoke with tobacco several nights running when the leaves are dry, and next morning syringe over and under the leaves with soot water, holding a pound of size in solution in four gallons of water. If thoroughly resolved have a size solution, with a pound to the gallon, and daub the bug with a brush wherever he shows himself. Unless the plants are vigorous, very vigorous, the clearing-out system, and beginning afresh with clean plants, will be the best. When a plant easily raised becomes so infested we consider that the furnace is by far the best remedy and cure; and yet young gardeners will pass such plants day after day, resolving that they will have them cleaned some time, but not yet. Ay, that is the cause of failure.

CALCEOLARIA SEEDLINGS (M. H.).—Your four seedlings are most beautiful, and 3 and 4 are newly marked. 3 is the best for a lady's eye, and the finest we ever saw, but we are no florists; the novelty is in having *oculata*-like spots on the field of spotted Calceolarias, as in *Stanhopea tigrina* and *oculata*. 1 is a brown with a yellow ring round the breast, and over the edges of the hood; the field of purplish brown is marked with yellow streaks as lightning is represented in drawings. 2 is richer in the same style. 3 is equally rich, brown, with more yellow, and the eye spots brown. 4 is yellow, with *oculata* large spots, besides the dotting. Surely these flowers are not from half-shrubby plants. They look like the most delicate and most useless herbaceous Calceolarias of florists, which are not nearly so useful as the common border annuals.

GERANIUMS (M. de R.).—Nos. 1 and 4 are very old Cape species. 1 is *pictum*, and 4 *radula*. No one can tell the names of 2 and 3. They are of the old, forgotten race of seedlings from the original species, a tenth part of which had only local names. No. 1 is the next best kind to cross from, after *echinatum* and *crassicaule*, to get genteel white bedders. 4 has always been a pet for the smell.

GIFT OF FLOWERS (T. H. D.).—The *Citriodorum pulchellum* will be proved in the Experimental; but from a flower or two on the cuttings we did not think highly of it. The Pansy bloom was a very beautiful thing. Many thanks for the Saxifrage, and many more for the *Fancy Pansies* when they come. We are collecting them from every corner of the kingdom for spring flowers. The address is Surbiton, Kingston-on-Thames, Surrey.

CULTURE OF PELARGONIUMS (Excelsior).—To grow and bloom Geraniums like Mr. Turner would be worth £2000 a year to some nurserymen, and he must clear £500 a year as long as he keeps his secret to himself. You have seen his plants, his pots, and his compost, and as to the "other items of management" you may rest assured that no tradesman would tell the world a secret by which he earns his fame and his daily bread, and which would next to ruin his prospects were it discovered by a thankless generation. Mr. Kidd is the only one we know who is likely to make out the reason of the Cucumbers going so;

but such gardeners are so ploughed and harrowed on their backs during the London season that we must wait till that is over, when they will have a respite to report their progress, and tell others everything they are asked as far as they know or can guess. All we can say is that this is a good time to make cuttings of Cucumbers from the best bearing plants, and of Melons to get rid of the red spiders of earlier forcing.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JUNE 26th. EXETER. Sec., T. W. Gray, Esq., Queen Street, Exeter.
JULY 8th, 9th, and 10th, 1857. LEAMINGTON. Sec., Thomas Grove.
JULY 9th. PRESCOT. Sec., J. F. Ollard.
JULY 28th, 29th, and 30th. SHEFFIELD, SOUTH YORKSHIRE, AND NORTH DERBYSHIRE. Sec., William Henry Dawson, Fig Tree Lane, Sheffield.
AUGUST 8th, 10th, 11th, and 12th. CRYSTAL PALACE. Sec., W. Houghton.
AUGUST 19. BRIDLINGTON. Sec., Mr. Thomas Cape.
AUG. 29th. CALDER VALE. Sec. W. Irvine, Esq., Holmfild, Halifax.
SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.
SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Sec., Mr. H. Churchill, King's Head Hotel.
OCTOBER 1st and 2nd. WORCESTER. Sec., Mr. G. Griffiths, 7, St. Swithen Street, Worcester. Entries close Sept. 19th.
NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.
DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.
DECEMBER 30th and 31st. BURNLEY AND EAST LANCASHIRE. Entries close December 1st. Secs., Angus Sutherland and Ralph Landless.
JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.
JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.
N.B.—Secretaries will oblige us by sending early copies of their lists.

REMINISCENCES OF A POULTRY JUDGE.

THE sole object of the writer in bringing these recollections before the public is to induce an increased amount of attention to one or two of the most prominent and decidedly important features connected with poultry meetings, and which have evidently on many occasions not received the regard they deserved. The exposition is not brought forward as remedial of the past, but in the anxious hope that shortcomings of a similar character will not be permitted to spread their baneful influences on the prospects of societies which, from being, perchance, at the outset of their "first attempt," might otherwise, at least in some cases, fall into like errors, and consequently be subjected to similar after-annoyances. They are, therefore, offered with the firm impression that naught tends so greatly to the avoidance of evil as to receive the friendly admonition of coming danger.

There cannot be a second opinion that the majority of mishaps connected with Poultry Exhibitions arise exclusively from the very general failing of leaving the several arrangements in the hands of a body of amateurs unaccustomed to the fulfilment of these untried duties, and who are likewise too prone to shift the responsibility of the different items so much upon each other that not unfrequently the sequel proves they are neglected by one and all, when individually presumption alone favoured the supposition that every possible contingency was amply provided for. In the formation of any Poultry Society, therefore, experience proves the advisability of appointing *individual* superintendence to each particular item, and holding that Committee-man alone responsible to his colleagues for the efficient completion of whatever duties his department involves. It has ever been the case that so constituted, with occasional meetings to consider general features, no considerable instance of neglect has occurred, and it is equally acknowledged that, where the duties were generally supposed as appertaining to the Committee as a body, irremediable errors have been the order of the day. One source of mishap not unfrequently arises from the aptitude of some members of such officials to embrace with extreme enthusiasm at the onset the scheme for holding their local Poultry Exhibition, but, as unforeseen anxieties arise, gradually lapsing into a course of inanition, and either leaving the project entirely to the greatly increased care of a very few, or so indolently carrying out the general plans that their actual resignation altogether from the Committee would have been suggestive of the least troublesome consequences. If every official thus connected with the approaching meeting felt his personal responsi-

bility for the faithful carrying out certain appointments allotted him, there would be scarcely an instance on record where they were not actually completed, and thus an endless amount of recrimination would be avoided, that would undoubtedly have transpired where each laid all shortcomings on his fellow in hope of individual exoneration.

Rigid adherence to the rules and regulations as they appear on the printed prize-list ought never to be deviated from even in the slightest particular; indeed, the members of the Committee themselves, where exhibiting, should be held equally amenable to these provisions with the most distantly situated and personally unknown competitor.

Such plans, regarded as positive rules, leave no room for even the disappointed to quibble and dispute; whilst it cannot be too strongly urged on all societies that charges of unfairness, when preferred, even if without any real cause or foundation, tend to future disadvantage, and sometimes to very considerable individual annoyances at the time being, as the rule may be considered almost invariable that "trumped-up charges" against a Committee by the disaffected are those most pertinaciously adhered to, particularly where a loose screw can be found to hang appearances of injustice upon. Therefore, prudence dictates that in all cases the managers should be able to fall back upon their printed regulations as having been strictly adhered to, and as the only and all-sufficient rejoinder to *every* complainant; in fact, this is the only really safe ground they can occupy.

By all means secure the most efficient Judges that can be procured; even if entailing a little extra trouble the event will fully convince that such a step was certainly the most advisable one, alike conducive to future interests and present comforts. As, undoubtedly, where all is intended to be fair and above board, it is the wisest policy to avoid suspicion, let hotel accommodation be theirs, at least until after the awards are completed. My reason for thus peremptorily speaking on this subject is the time-proved fact that, if the really innocent and well-intentioned hospitalities of any Committee-man are accepted, and the following day premiums happen, however deservedly, to fall in that direction, there will certainly be no lack of invention displayed by some who really "cannot lose" to connect and identify the two incidents as the natural results of cause and effect.

I at once admit it is a matter of regret that it should be so; but, as human nature is frequently constituted, unless the plan I have suggested is complied with, not unfrequently very unseemly innuendoes will certainly result, and oftentimes be urged so intemperately as to lapse very closely on a positive outbreak of those rules that are everywhere admitted as the bulwarks of respectable society, and which can never be infringed without permanent injury to order and goodwill. As in the generality of instances the Judge or Judges are strangers to the locality, not only ought proper inn accommodation to be previously engaged by the Committee for them, but, in all cases where the show is held at considerable distances from a public mode of conveyance, means ought to be adopted to meet this emergency. To exemplify my meaning I will mention a case or two that, during my poultry career, occurred to myself, proving to me where the "shoe sometimes pinches," and, all the circumstances considered, with most unpleasant severity. I will not, of course, mention localities, as I have not the most distant desire to hurt the feelings of any one, but simply to prevent the repetition of such disasters upon those who may officiate in future, and to spare them unforeseen inflictions, of no very trivial character I can assure them, should they meet with the same mischances as I have done.

I received an intimation from the Secretary of the ——— Show that a bed was bespoken for me at the ——— Arms, and that it would be very advisable I should commence duty as early as possible the following morning, as, being connected with an Agricultural Society, the Committee anxiously hoped that there would be no delay in the time of opening to the public. To save expenses to the Committee and the loss of time to myself I journeyed to my *locale* by the "last train" of the evening, and, taking a cab from the station, was soon at the door of my inn. A waiter quickly was in attendance, with the at first disregarded intelligence that they were quite full, and that there could not be a bed got anywhere. On, by request, seeing the landlord, and presenting the Secretary's letter as a credential, I was assured

that no bed had ever been spoken for to himself or wife on my behalf; and Mr. ———, the Secretary, was at the Show yard, two miles away. It was raining in perfect torrents, and I was assured by the landlord that I could not get a bed in the town, nor could *he* procure me one for love or money. In this dilemma I candidly admit that, could I have returned that night to my own home, I should have certainly done so, which I feel I should have been justified in doing, leaving a brief note explanatory of my reasons for returning; but I could not until six the next morning—seven hours and a half to come; and, whilst considering what was to be done, after having already travelled nearly one hundred miles, I was agreeably surprised by the breathless return of a servant-maid, who had overheard the conversation whilst waiting to be served at the bar. She, it seems, had briefly explained to her mistress what had taken place, and her employer, as I afterwards found, being rather a poultry enthusiast, offered me the then most acceptable and unlooked-for accommodation; nor was his kindness unreturned. Still, for expenses of travelling and other incidentals I never received myself one farthing, the Secretary calmly stating that their funds were exhausted, and that, as there would not be any future meetings of the society, it could not be expected he should pay money out of his own pocket. His explanation of the affair was that he *intended* to have ordered a bed for me when he wrote to me that it was done; but afterwards, in the bother of business, forgot it, for everything lay on himself. This I believe, for after inquiry proved pretty clearly that the Secretary and Committee were "rolled into one," or very nearly so.

Again, on another occasion, I was by letter, at my own especial request, informed that an omnibus would meet the half-past nine p.m. train, the last arriving there that night, at the ——— Station, being *six* miles from my final destination, and would bring me direct to the ——— Hotel. I obeyed orders as forwarded to me, and was conveyed to certainly one of the most secluded stations I ever in all my travelling met with by the train specified, and was the *only* passenger who alighted. On giving up my ticket to the policeman on duty I inquired for the omnibus, and found its next attendance would be "at eight in the morning!" The official was evidently very ill, distressingly so, closely approaching prostration, and, after refusing me admission, although any gratuity he wished for was offered him, to his solitary house (for no other could be seen anywhere), and explaining briefly but courteously that it was contrary to orders, and would get him dismissal, quietly wished me good night, and said he hoped some one *might* pass that could take me on. Sitting alone on my portmanteau, with heavy clouds flitting incessantly between myself and the moon, disturbed only by the sudden start of an occasional wild rabbit springing quickly across the lane, and listening despondingly to the mournful cries of the lapwing and curlew at the distant river-side, I passed two hours and upwards in what might with justice be called "an initiatory lesson" of the sufferings of an emigrant when first located. I felt, I admit, as though sitting on the box of Pandora, without any hope in its hold. "A night at it" seemed certain. An effort, by raising both arms and crying out lustily, to stop a luggage train proved futile; and I confess to the expression of an audible "wish" that the cause of my misadventure and I should change places, and then see how far it would meet his approval as self-applicable. At length an empty maltster's cart came by, and for a *douceur* the man in attendance agreed to take me the six miles to the hotel, and, sitting on the "cratch" of this homely vehicle, I at length, to the downright "astonishment of the landlord," reached the inn, where a very comfortable accommodation, the least not being a warm room, soon made me forget my former uncovetable position. To explain: it seems *no inquiry* had been made expressly by any member of the Committee, and the expectant omnibus had for weeks before "ceased running" to the train I was *ordered* to proceed by. It is simple justice to state emphatically that no Committee, individually or as a body, could possibly express greater regret than they did for my unforeseen mishap, nor would I thus even anonymously allude to it but in the hope of preventing the like annoyances to others.

I will not lengthen by detail of other instances of the carelessness of Committees, the subject being to all alike

unpleasing, though I could do so considerably; but as I myself consider every labourer worthy of his hire, and I find not a few of such societies adopt principles diametrically opposed to those views, I will draw to a close by the simple mention of the fact that, entirely exclusive of all the shows that I have voluntarily agreed to adjudicate gratuitously, I have attended twenty-three where expenses refunded were faithfully "promised," yet in not one single instance have I ever received one farthing; whilst at fifteen of these meetings I paid my own hotel expenses also, besides those of transit, and travelled in the aggregate considerably more than three thousand miles to fulfil the duties allotted to me. Most certainly Judges of poultry ought not to be thus treated if they attend properly to their appointed duties; it is the way to drive away many that would possibly have not only enjoyed the office, and faithfully fulfilled its requirements, but also, if still continued, precludes even the expectance that really disinterested individuals will accept office; but still I hope the mention merely will work its reformation; it is most desirable for the good success of such undertakings, and undoubtedly arrangements once entered into ought to be fulfilled, even where the ways and means fall short of the anticipations of its original projectors.

My convictions are very decided that Poultry Shows will even yet increase, both as to numbers and likewise as to importance, if properly conducted. On that all depends. If laxity and indifference to general results have been prominently a feature of any managing Committee I always found non-success inevitable; on the contrary, I cannot call to mind even one isolated case of failure where really business-like men took possession of the helm.

In conclusion, when we reflect on the immense aggregate of breeders and exhibitors of poultry now existent throughout the land, the great amount of recreation to some and emolument to others, the poultry movement induces, it surely becomes equally a duty, and ought to be an inclination, of every one to do all in his individual power to remove inconsistencies, and place on a secure foundation an amusement so innocent in itself, and which, if disposition leads them, there are very few indeed who, from outward circumstances, are debarred enjoying. — EDWARD HEWITT, *Eden Cottage, Sparkbrook, Birmingham.*

THE PHILOPERISTERON SOCIETY.

In reading your publication of the 26th of May last my attention was attracted by a communication headed "Pigeon Clubs of the Metropolis," which I think calls for some few remarks from me, as Honorary Secretary of the Philoperisteron Society, while at the same time I may claim exemption from the charge of any invidious feeling towards the National Columbarian Club (the other Society referred to), being also a member of it.

Your correspondent, "J. H. S.," starts by saying that the Philoperisteron Society was established by a few gentlemen, who hoped to place it on a similar footing with its predecessor, the Old Columbarian Society, a hope which "J. H. S." does not deny has been fully realised; and then he proceeds to state that its honours are now shared and its numbers passed by the National Columbarian Society, started only at the close of the last season. Now, how can a comparison be instituted between a society which, like the Philoperisteron, has been established for more than ten years, and the fame of whose birds and exhibitions has extended to America and most parts of the world, and a society like the National Columbarian, but recently established, and which up to this moment has not had even a private exhibition of birds?

As to the relative number of members referred to by "J. H. S.," the Philoperisteron, like the Old Columbarian (so justly lauded by him), is not desirous of great numbers, but merely enough to produce a good show of birds, make a friendly party, and pay expenses, all which it has attained. Besides, it should be borne in mind by "J. H. S." that mere number of members does not constitute the excellence of an exhibition of Pigeons, but the number and quality of the birds are the essential requisites of a Pigeon Society.

For the merit of the birds exhibited, the ease with which visitors can at our annual Exhibitions inspect them without crowding or any other inconvenience, the elegance of the Hall, and the beauty of the pens, the Philoperisteron Society may challenge comparison with any society in the world.

Your correspondent further asserts that the Philoperisteron Society, though in some respects equal, is in his opinion in many respects inferior to its rival. It would seem that "J. H. S." was a little startled with the difficulty of proving this proposition, and therefore has not attempted it, but has quietly glided into a general proposition that the increased expenses (which I may state are incurred principally for the accommodation and gratification of visitors) are not counterbalanced by increased advantages. Pray let me ask how "J. H. S." can tell whether "there are no corresponding advantages for the larger subscription" until the new Society has commenced its exhibitions. Is he gifted with second sight, and thus able to argue against what is and has been by comparing it with what is to be? Does he mean to assert that the new Society will give the public so large and commodious a hall as the Freemasons' Hall without an increased subscription? I think he will not venture to assert that. Will their pens be as good, or their birds of as high a quality, as those of the Philoperisteron Society? All this remains to be seen.

But the severest blot upon the Philoperisteron escutcheon, and the hardest of digestion by "J. H. S.," is "the annual dinner," which is not paid for out of the funds of the Society, but by the members themselves. What an unreasonable man "J. H. S." must be in seeking to abolish a friendly meeting which comes but once a year, and which, it seems to me, tends very much to keep societies together, and promote a good feeling among the members! There is nothing to compel any member to be present or bear any part of the expense, and any member not attending loses nothing save a very agreeable entertainment.

In all I have said I mean not one word against the respectability of the National Columbarian Club (many members of the Philoperisteron Society, as well as myself, are enrolled amongst its members and anxious for its prosperity), but I desire only to protest against such comparisons as "J. H. S." has drawn being *now* instituted, and to suggest that they would have been better deferred until a year or two of active operations had enabled "J. H. S." to point to what had been done by the National Columbarian Club, rather than to what is about to be done.

I did not read the number of your paper I have referred to sooner, as at this time of the year I am much engaged, or I should have written to you earlier on the subject.—W. W. HAYNE, *St. James's Road, Croydon Common.*

GAME BANTAMS.

I WAS much interested in reading the letters of "DANDY" and "MERRY LEGS" on the subject of Bantams. I lament very much with them the neglect with which Game Bantams are *now* treated, and I wish that fanciers would turn their attention to this beautiful and useful class of poultry, thus giving them their right station at Poultry Shows. In point of fact there are very few really good Black-breasted Red or Duckwing Bantams, for generally these two sorts, as well as the Piles, are in my opinion too coarse and large.

Rely on it if more attention is not paid to the breeding of true Game Bantams we shall soon lose this breed, which is in no respect inferior to either White, Black, or Laced Bantams, and in some points their superior. A separate class should be allotted to Game Bantams, as there is to the other sorts, and they should not be condemned to "waste their sweetness" in the "class for any other variety." Remember that, as "DANDY" said, and I said in my Plea for Bantams, Game Bantams are "capital layers and wonderful sitters, tight-feathered, and hardy."

A few words as to the breeding of these little beauties may not be here out of place. Feed them well till six weeks old; then, as they must be small, feed light. August is the best hatching month, and even later sometimes. Select the smallest and most accurately-marked birds for breeding from.

I saw in a recent number of your paper a declaration that the colour of Dorkings is immaterial. Now, this is founded, I think, on the saying, "Dorkings never breed true to colour." However, the Grey sort, I think, do, and the striped neck is a mark of Dorkings that are always bred true enough.—A WILTSHIRE POULTRY-KEEPER.

GAPES—IS THE DISEASE INFECTIOUS?

A NEIGHBOUR of mine has been for many years a large breeder of poultry, which were reared by his *present servant* without much trouble or loss. Seven years ago he bought some Dorking fowls to cross with his own, which, upon being turned up, were discovered by his "hen-wife" to have "the gapes." Most of these died, and many of her own took the disease, *which was unknown to her till that time.* Ever since the gapes have appeared regularly each year, and have taken off many hundreds of chickens and young Turkeys. I saw what had been a brood of twenty-seven of the latter, now numbering seven only, and they showing every symptom of the disease. No care or cost is spared, everything is clean, and a finer place for poultry it is impossible to imagine. Would you advise the yard to be *thoroughly* cleared of every head, and begin *de novo* another spring? They have thrown all crosses into the poultry; still they cannot get rid of the gapes. Do you suppose that the bought Dorkings brought it, and that it has hung about the yard ever since?—F. B. P.

[We do not think gapes infectious, for it is very unlikely that the eggs or the young parasitical worms, which are the cause of disease and death to poultry, escape or are ejected from the windpipe of an infected fowl, and could, if they were so ejected, get into the windpipe of another fowl. They might by a remote possibility get into its gizzard, and there meet their death. We believe that the parasitical worms in poultry, like the thread-worms (*ascarides*) in the human body, only appear in individuals of relaxed and weakly constitution, and that such a constitution, and consequently a liability to such vermin, is hereditary. It is also quite certain that some poultry-yards are more liable to this disease than other yards in their immediate vicinity, and we have always observed that the worst drained are most liable to it. Diet has no little influence over it, and we should keep our fowls on more generous food, give them an abundant and daily supply of fresh water, and have their houses scrupulously clean and well ventilated. Everything tending to render the fowls robust and vigorous is to be adopted. We recommend you to part with your entire stock, to have the yard thoroughly cleansed and drained, and to buy your new stock from healthy yards, buying the cocks from one yard and the hens from another.]

BRAHMA POOTRAS ARE GREY SHANGHAES.

MAY I trespass on the space of your excellent paper for the purpose of saying a few words about Brahma Pootras? In your last two numbers there have been two letters about them. Your correspondents, "ONE WHO HESITATES BETWEEN BOTH" and "H. R.," both affirm that Brahmas are *not* Cochins. But, Sir, I say they *are*. Brahmas are nothing else but *Grey Shanghaes or Cochins*. I am supported in this, Sir, by the authors of "Poultry for the Many," and by Mr. Tegetmeier, who says:—

"All the Brahmas that have come under my notice (and I have made a point of seeing as many as possible) have been of either one or the other of the three following varieties, namely, 1. Grey Cochins; 2. Cross-bred Cochin and Dorking; 3. Cross-bred Cochin and Malay or Chittagong. That the best of these birds are nothing more than Grey Cochins is proved by the fact that they have been frequently imported from Shanghae with the Buff birds ever since the latter have been introduced, and I know personally that the descendants of Grey Cochins which were thus introduced into this country before the name of 'Brahma' was ever heard of have taken prizes as Brahma Pootras."

Thus, Sir, Mr. Tegetmeier plainly proves that Brahmas are Cochins. Brahmas do not fly so very easily over fences,

for they can only fly over fences *not exceeding four feet in height*. The reason that other Cochins are not able to fly is because they are much heavier than their Grey relatives; and, moreover, the wings of Brahmas are much larger than those of Cochins. Brahmas do not forage any more than Cochins; and, lastly, Brahmas roost quite as early as Cochins.—A DORSET POULTRY-KEEPER.

OUR LETTER BOX.

WHITE SPANISH FOWL (*An Oxonian*).—It is not uncommon for a white bird to appear occasionally among the purest-bred Black Spanish. It is no evidence of any cross having occurred.

DISEASED PIGEONS.—"I have just purchased a black Carrier cock which has a disease in its throat, a continual gurgle, and its wattle is quite white. I keep three sorts of Pigeons (Carriers, Jacobins, &c.), which have lately all laid bad eggs, though they never did before, and all are middle-aged birds. I have recently given them rock salt, which they never had before. Can you tell me a remedy in each case?"—W. G.

[The gurgling in the Carrier's throat is probably croup. If so, dissolve three grains of tartarised antimony in a quart of spring water, and give a tea-spoonful daily; keep the bird in a dry, sheltered place, free from draughts, and allow him what green food he will eat, as chickweed, lettuce, &c. We know of no reason why the eggs of all should prove unproductive. Are the birds weakly from confinement, or are they affected with parasites? If so, a little powdered sulphur dusted under the feathers, or a little animal oil rubbed on the skin, will disperse them.—B. P. B.]

LONDON MARKETS.—JUNE 22ND.

COVENT GARDEN.

A good supply and marked improvement in the trade. The usual consignments from the Continent and west of England reach us in excellent condition.

FRUIT.

Apples, per half sieve,....	6s. to 8s.
" dessert, do ..	0s. ,, 0s.
Pears, over	
Pine-apples, per lb. ..	5s. ,, 8s.
Grapes, per lb.	3s. ,, 6s.
Peaches, per doz.	18s. ,, 30s.
Nectarines, do.	15s. ,, 24s.
Strawberries, per pun.,	1s. ,, 2s.
" Foreign, none	
Melons, Foreign	2s. ,, 6s.
" English	3s. ,, 6s.
Cherries, per lb.	2s. ,, 5s.
Oranges, per 100	5s. ,, 12s.
" Tangerine, none	
" Seville, do. ..	0s. ,, 0s.
Lemons per doz.	1s. ,, 2s.
Almonds, per lb. ..	2s. 6d. ,, 4s.
Nuts, Filberts, none	
" Cobs, per lb. 1s. 6d. ,,	0s.
" Barcelona, per	
bushel.	20s. to 24s.
Nuts, Brazil, ditto. ..	14s. ,, 16s.
Walnuts, per 1000 ..	10s. ,, 15s.
Chestnuts, per bushel	16s. ,, 24s.

VEGETABLES.

Cabbages, per doz.	9d. to 1s. 3d.
" Red, each	3d. to 6d.
Cauliflowers, each	3d. ,, 6d.
Broccoli, per bunch, 1s. to 1s. 3d.	
Greens, per doz. 1s. 6d. ,,	2s. 6d.
Spinach, per sieve 1s. ,,	1s. 6d.
French Beans, per hd. 2s. ,,	3s.
Carrots, per bunch ..	6d. to 1s.
Parsnips, per doz.	9d. ,, 1s.

Beet, per doz.	1s. to 2s. 0d.
Potatoes, new, per cwt. 6s. to 18s.	
Onions, per bush	10s. ,, 12s.
" Old, per bush.	— ,, 0s.
Turnips, per bunch. ..	6d. ,, 1s.
Leeks, per bunch	2d. ,, 3d.
Garlic, per lb.	6d. ,, 8d.
Horseradish, per	
bundle	2s. ,, 4s.
Shallots, per lb.	6d. ,, 8d.
Lettuce, Cos, per score 6d. ,,	1s.
" Cabbage, do. do. 6d. ,,	9d.
Endive, do. do.	— ,, 4d.
Celery, per bunch.	9d. to 1s. 6d.
Radishes, Turnip, per	
dozen bunches	— ,, 1s.
Ditto, long, per hund.	— ,, 6d.
Water Cresses, per doz. 9d. to 1s.	
Small Salad, per	
punnet.	2d. ,, 3d.
Artichokes, per lb.	— ,, 2d.
Asparagus, p. bundle 1s. 6d. ,,	4s.
Sea-kale, per punnet. ..	1s. ,, 2s.
Rhubarb, per bundle	4d. ,, 6d.
Cucumbers, each	6d. ,, 1s.
Mushrooms, per pottle	1s. ,, 2s.

HERBS.

Basil, per bunch	4d. to 6d.
Marjoram, per bunch	4d. ,, 6d.
Fennel, per bunch ..	2d. ,, 3d.
Savory, per bunch ..	2d. ,, 3d.
Thyme, per bunch ..	2d. ,, 3d.
Parsley, per bunch ..	2d. ,, 3d.
Mint, per bunch	2d. ,, 4d.
Green Mint	6d. ,, 8d.

POULTRY.

There has been a good supply of poultry during the past week, but there has also been a great demand, which keeps up the prices.

Large fowls. . 7s. 6d. to 8s. 0d. each.	Guinea Fowls 0s. 0d. to 0s. 0d. each.
Smaller do. 4s. 0d. to 6s. ,,	Pigeons 8d. to 9d. ,,
Chickens .. 2s. 9d. to 4s. 0d. ,,	Rabbits 1s. 5d. to 1s. 6d. ,,
Goslings 6s. to 6s. 6d. ,,	Wild ditto 6d. to 10d. ,,
Ducklings. 3s. 6d. to 4s. 3d. ,,	Leverets 3s. 0d. to 5s. 0d. ,,

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—June 23, 1857.

WEEKLY CALENDAR.

D M	D W	JUNE 30—JULY 6, 857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
30	TU	Barrenwort (Epimedium).	30.114—29.997	80—49	N.W.	—	48 a. 3	18 a. 8	11 56	9	3 18	181
1	W	Cinquefoil (Alchemilla).	30.202—30.178	71—44	N.E.	—	49	18	morn.	10	3 30	182
2	TH	Dodder (Cuscuta).	30.193—30.162	72—36	N.E.	—	50	18	0 10	11	3 41	183
3	F	Sea Lungwort (Pulmonaria).	30.217—30.170	73—37	N.E.	—	50	17	0 26	12	3 52	184
4	S	Buckbean (Menyanthes).	30.100—30.022	78—48	N.W.	01	51	17	0 50	13	4 3	185
5	SUN	4 SUNDAY AFTER TRINITY.	30.014—29.993	76—45	W.	—	52	16	1 23	14	4 14	186
6	M	Bog Pimpernel (Anagallis).	30.002—29.943	77—49	W.	02	53	16	2 8	15	4 24	187

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 74.8°, and 52.0°, respectively. The greatest heat, 97°, occurred on the 5th, in 1852; and the lowest cold, 35°, on the 3rd, in 1849. During the period 115 days were fine, and on 81 rain fell.

In the burial place called "The Poor's Ground," in the Hackney Road, may be read this memorial:—

“Mr. THOMAS FAIRCHILD,
Of Hoxton, Gardener,
Who departed this life
On the 10th of October, 1729,
In the 63rd year of his age.”

An inscription not likely to attract attention, yet marking the resting-place of the body of no common member of "those whose talk is of grafting and digging, who smell of bast mat, and who tuck one corner of their blue apron through its waist-tye."

Mr. Fairchild was one of the few gardeners of his time who united a love of science with the practice of his art. He was a nurseryman and florist residing at Hoxton, where his establishments, known as "The City Gardens," were the most extensive and best near London, and were greatly frequented, not only for their agreeable situation, but for the variety, rarity, and excellence of their productions. He was also one of the latest English cultivators of a vineyard, for he had one there as late as 1722. Long residence in the vicinity of the metropolis made him painfully conscious how, by degrees, plants ceased to be cultivatable there which had flourished amid its houses in his younger days. To enable the citizens to contend against this growing plant mortality, he published, in 1722, *The City Gardener, containing the most experienced method of cultivating and ordering such evergreens, fruit trees, flowering shrubs, flowers, exotick plants, &c., as will be ornamental and thrive best in the London Gardens*. In its preface he says: "I have for upwards of thirty years been placed near London, on a spot of ground where I have raised several thousand plants, both from foreign countries and of the English growth, and in that time, and from observation I have made in the London practice of gardening, I find that everything will not prosper in London, either because the smoke of the sea-coal does hurt to some plants, or else because those people who have little gardens in London do not know how to manage their plants when they have got them. Yet one may guess at the general love my fellow-citizens have for gardening, in the midst of their toil and labour, by observing how much use they make of every favourable glance of the sun to come abroad, and of their furnishing their rooms or chambers with basins of flowers, or bough-pots, rather than not have something of a garden before them."

As Mr. Fairchild was alarmed by the gradual extinction of plants, so we, on the other hand, are now astonished to find such statements of what still flourished in his time within the city's bounds as are contained in these extracts:—

"Pears bear very good fruit, as may be observed in very close places and confined alleys about Barbican and other places about Aldersgate Street, Bishopsgate Street, &c." "To these we may add the Vine, which will do very well in London, either against walls or without them. In Leicester Fields there is a Vine that bears good grapes every year."

"Figs prosper extremely in the city, and the smoke has no ill effect upon them. The Reverend Mr. Bennet has some of them in his garden at Cripplegate. They have ripened very well in the Rolls Garden in Chancery Lane."

"There are now two very large Mulberry trees growing in a little square yard, about 16 foot square, at Sam's Coffee House in Ludgate Street."

Besides the work we have mentioned, Mr. Fairchild communicated a paper to the Royal Society, *On the different and sometimes contrary motion of the sap in Plants* (Phil. Trans., No. 384, 1724), and the following extracts will show his thoughts and experiments relative to subjects which still interest the gardener and botanist. He grafted *Laureola*, an evergreen, upon *Mezereon*, a deciduous shrub, and *Evergreen Oak of Virginia* upon the common *English Oak*, yet both retained their leaves and flourished, "which plainly shows that the juices rise upwards in winter." Mr. Fairchild adds, that "the Crab stock makes the wood of the Apple tree (grafted on it) more firm and lasting than that on the Apple stock, and Peaches and Almonds budded on Plums are more lasting than those on Peach trees." "I inarched a Pear tree upon two Pear stocks in March, 1721-2, which is now in a good flourishing condition, with a branch in blossom, and receiveth no nourishment but by the two inarched branches, the roots being out of the ground, and though it was done above two years ago it is now shooting suckers out of the roots, which proveth that the branches are as useful to support the roots as the roots the branches, and it is, therefore, no wonder that so many trees miscarry in planting, when there are no branches left on the head."

Hoxton is in the parish of Shoreditch, and when Mr. Fairchild died he gave, by his will, the sum of £25, to the trustees of the Charity School and the church-

wardens, to be by them placed out at interest, for the payment of 20s. annually for ever, for a sermon on Whit-Tuesday, in the afternoon, at the parish church. The bequest, in 1746, was increased to £100, South Sea Stock, and vested in the President and Fellows of the Royal Society, and the interest is paid to the lecturer annually.

Whitsuntide is usually one of the most brilliant holiday-tides of the whole year. It is almost always a time of sunshine and soft breezes, and being also the high festival time of our flowers, we may then realise, as nearly as is permitted to exiles from Paradise, that happy period when might be heard "the voice of God, walking in the midst of the Garden." Perhaps Thomas Fairchild felt this, and for that reason provided those funds which ever since his death have been devoted to secure the delivery, according to his directions, on each Whit-Tuesday, of a Lecture "On the wonderful works of God in the Creation; or, On the certainty of the Resurrection of the dead, proved by the certain changes of the animal and vegetable parts of the Creation." Bright themes are these, and around them the scienced and the eloquent have concentrated illustrations which demonstrate, beyond dispute, that an all-wise and all-powerful Being formed the world, and formed it, too, with an all-benevolent design. Nor is that design abortive; for, as Paley remarked, even in the pain and weakness of his dying hours, "It is a happy world after all." Happy, not only because enjoyment prevails here, but because the same design assures us that the day, or rather, the eternity shall come when there shall be no more death; but as the seed dies to become fruitful, and as the perfect Golden-eyed Lacewing comes forth from the ceremonies of the chrysalis, so we have the glorious hope that we shall rise from the grave to rejoin, and be ever present with, those loved ones who have passed before, to abide with Him who lived and died also "to prepare a place" for them.

Connections and thoughts such as these comforted and elevated the heart of Fairchild, for he not only founded the lecture on such themes as we have mentioned, but he tells us, "When we are not yet arrived at the pleasures of a large garden, or cannot enjoy the benefit of a large piece of ground, we content ourselves with a nosegay rather than fail. There is, I confess, a very wide difference; but where a little is only to be had we should be content with little; industry will always find out more; and if their riches do not too much engage their mind they may have content too, for whoever understands and loves a garden may have content if he will, because he has opportunity every day of contemplating the works of the Creation, and admiring the power and wisdom of the Creator, which I think is the greatest happiness."

Last year a very eloquent sermon was delivered by the Bishop of Oxford, and on the 2nd of the present month, being Whit-Tuesday, we listened to a similar address by the Rev. Mr. Walker. Handsome bouquets appropriately were on either side of the lecturer as he discoursed on part of the 20th verse of the 1st chapter

of Romans: "The invisible things of God, from the creation of the world, are clearly seen, being understood by the things that are made, even his eternal power and godhead." And, as the lecturer observed, if such were the case when St. Paul wrote, much more can those invisible things be appreciated now that science has bestowed on man a more perfect knowledge of the things created. Science shows, and the strata of the earth reveal, that there is a progressive advance to a higher form, and all consonant with the assurance given by Revelation that there is still a higher form yet to be unfolded.

Of the Fairchild Lectures the following have been published:—

By *Dr. Denne* (Matt. vi. 28—30), in 1730. (Gen. i. 11—13), in 1733, on Vegetable Creation. And (Psalm viii. 4—6), in 1745, on God's regard to Man in his Works of Creation. By *Dr. Wm. Stukeley* (Gen. i. 11), in 1760—63, three sermons. And by the *Rev. Wm. Jones*, one on Botanical Philosophy, another on the Economy of Beasts and Cattle; and a third (Gen. i. 9, 10), on the Natural History of the Earth and its Minerals.

Besides these, among the preachers we find the Rev. H. Wheatly, Rev. John Brigden, Rev. John Vade, Rev. Michael Marlow, Rev. Dr. Anselm Bayley, Rev. Henry Owen, and the Rev. Samuel Ayscough.

That admirable weekly publication, "Sunday at Home," recently published some extracts from the Fairchild Lectures, and from them, in conclusion, we quote the following:—

"Dr. Denne, in his learned discourse on Gen. i. 11—13, delivered May 15th, 1733, says: 'What pleasure is there in all the busy scenes of life unless we can now and then be relieved from the hurry and fatigue of them by rural retirements and entertainments, where the vegetable world receives us with all the sweetness and freshness of air uncorrupted, which alone is often able to revive us when past recovery by all the powers of physic? We are there treated with a gay and smiling countenance, but without hypocrisy and deceit..... There are as many beauties and as great curiosities growing wild in common fields as can be collected at a great expense in the best of gardens. The country, without much art, opens into an inexpressible variety of scenes, which diversify the face of the earth, and fill the mind with a perpetual succession of images, so that one can hardly ever be weary of rambling from one labyrinth of delight to another; or if one is, we may sit down with delight under the shadow of vegetables. And that all these pleasures may not be quite lost to those whose business or fortunes immure them to this metropolis, the founder of this lecture thought it worth his while to contrive a city garden for them.' The lecturer here refers to a public garden which the founder of the lecture had opened. At the conclusion of the discourse a faithful warning is given to those who misimprove all the Christian privileges with which they are surrounded, whose ungrateful return for all the care they receive is like that vineyard described by the prophet Isaiah (chap. v.),

which brought forth wild grapes. Having described the woes of the unfruitful, the preacher adds: 'These, my brethren, are the punishments which God in justice threatens to inflict in this world upon such men as are here figured by an unfruitful vineyard; and no doubt the whole vegetable creation will rise up in judgment against us on the day of his Son's coming to receive our fruits, and will condemn us to be hewn down and cast into the fire, if under all these natural and providential advantages we do not break up our fallow ground, or if, when it is thus enriched in everything unto all plenteousness, it prove barren, unfruitful, or bring forth evil or wild fruit. But if we now abound more and more in knowledge and in all judgment, and in the fruits of righteousness, which are by Jesus Christ unto the praise and glory of God, we shall then be like trees planted by the rivers of water, prospering and flourishing in this world; and when we die we shall be transplanted into a better soil and a happier climate; we shall be blessed, and receive a right to eat for ever of the tree of life, which is in the midst of the paradise of God.'

"On the 1st of June, 1852, the Rev. J. J. Ellis delivered his forty-seventh lecture, the text being Genesis, chap. i. 11, in which he showed the analogy of nature in favour of the Christian doctrine of the resurrection from the dead, as shown by the renewal of the plant from the root, the tree from the seed, and the decay and revival of all vegetable creation.

"The remarkable vitality of seeds and of certain lower forms of animal life may, indeed, well strengthen the faith of the contemplative Christian, as he anticipates those long years that will elapse between death and the resurrection. The 'Spring' volume of Duncan's 'Sacred Philosophy of the Seasons' repeats a number of most interesting facts on this subject, which were collected by a writer in Professor Jameson's journal. The writer in question states that the seeds of various plants and flowers which have lain dormant in the ground through a succession of ages have either, by being exposed to the air, been enabled to vegetate, or been brought into action by the application of some compost or manure agreeable to their nature. He mentions that in boring for water at a spot near Kingston-on-Thames some earth was brought up from a depth of 360 feet, which was carefully covered over with a glass to prevent the possibility of other seeds being deposited upon it, and yet in a short time it produced plants. It is stated on the same authority that some ground in Bushy Park, which had probably been undisturbed by the spade or the plough since the reign of Charles I., was turned up in winter, and in the following summer was covered with a profusion of Tree Mignonette, Pansies, and wild Raspberry plants, which are nowhere found in a wild state in the neighbourhood. We may notice, also, the remarkable fact mentioned by Ray, that after the great fire of London, in 1666, the entire surface of the destroyed city was covered with such a vast profusion of a species of cruciferous plant, the *Sisymbrium iris*, that it was calculated that the whole of the west of

Europe did not contain so many specimens of this plant. Still more remarkable is the fact that seeds discovered in the mummy cases of Egypt have germinated and fructified. How it confirms our faith to look at such facts as these as we read the delightful promise, 'Thy dead men shall live, together with my dead body shall they arise. Awake and sing, ye that dwell in dust: for thy dew is as the dew of herbs' (Isaiah xxvi. 19). Bishop Lowth more correctly renders the words,—

" 'Thy dead shall live; my deceased they shall rise;
Awake and sing, ye that dwell in the dust!
For thy dew is as the dew of the dawn.' "

A FEW REMARKS ON VINES.

WHAT a wonderful plant is the Vine; how remarkable in character and habit; how durable; and what numerous associations of pleasing ideas connected with its history! To what a vast age it will live! Yet the Vine is a most susceptible plant in spite of its usual longevity, and will soon evince, by unmistakeable signs, the consequences of bad treatment, or conditions foreign to its habit. Treat it according to the mode of life it was framed for by our gracious Creator, and no plant is more manageable; place it under conditions foreign to its habits, and, behold, we are instantly beset with difficulties.

Now, there can be no doubt that there is such a thing as over-cultivation with Vines, and that they are not unfrequently injured by too much kindness. Amongst other works of supererogation I would point to the sometimes injurious effects of heavy top dressings or mulchings applied at improper periods. I named in my last communication to THE COTTAGE GARDENER that in February I had my borders pared to a hard surface with the spade, and that they had cracked in various directions during the dry weather in April. This I did in order to throw off heavy rains, and to obtain a free access of atmospheric warmth to the roots, for it is well known that the soil will more speedily transmit heat when in a solid state than when covered with a loose material; the consequence is that the Vines are very much improved, as I anticipated. This applies, of course, to succession crops, and if I think they need manurial matters I shall apply a coating of rich, rotten manure and tree leaves after the first hot period in June. There is no doubt that most of the failures in Vines are chargeable on an imperfect or fitful root action: of this I am assured. Those who succeed in the pot culture of Vines know full well the importance of taking especial care of the roots, and such care is equally necessary with border Vines. But there may be an over-action of the roots, leading to a coarseness of growth; and I wonder much to find of late such a fuss made about the size of the foliage, as though it followed that the larger the latter, the finer and more abundant the Grapes; but such is not sure to follow, albeit I am an advocate, in the main, for a robust development. As to a weakly growth, this, again, must be traced either to a bad root action or to over-bearing, and the latter being a serious evil of somewhat common occurrence, I must point to it as I proceed.

We all know that it is exceedingly interesting to stroll through a vinery where every rafter is laden from top to bottom with its luscious treasures, conveying at once an idea of comfort to the family, of attraction to the eye, and, lastly, of a satisfactory return for the outlay incurred in the erection and subsequent management of the structure. And some Vines will sustain this high character for years; but many soon break down or show signs of oppression. Under the best

of circumstances it is not well to load Vines up to the maximum point; it is not only prejudicial to their future welfare, but derogatory of flavour and character in the fruit. Those who are novices in Grape growing should remember that it is not the vigour of the Vine alone, neither the number of bunches that a Vine may under high inducements show, which ought to determine the weight of the crop. All this may be counted "stock in hand;" but the question remains—how to economise that stock. It is doubtless, after all, the amount of healthy foliage of the earlier formations that can be duly exposed to atmospheric influences which should, in the main, regulate the bulk of crop to be retained; therefore exposure to solar light is the thing to be chiefly considered. When leaves multiply, and come to overlay each other two or three deep, we may be assured that the lower series will take more from the system of the plant than they are able to repay.

The aggregate amount of Grapes that any Vine may be allowed to carry, admitting that the plant is in full health and disposed to a crop, may, in general, be determined as well by the length of the rafters of the house as by any other mode, however unscientific the procedure may seem. And why? Simply because most vineries have lights or sashes on the roof of about four feet in width. The matter thus becomes very simple. Not, however, that all houses are alike. I speak of the majority of our old lean-to structures; but our greenhouse vineries are required to admit light down every centre between rafters, for the sake of the *multum in parvo* subjects below. Such being the case, of course only about three quarters of the roof light may be occupied by the foliage of the Vines; and, therefore, whatever be their energies as to root action, their bearing must be limited accordingly.

There is one odd phenomenon connected with Vines and their bearing properties which, thanks to the sound practical knowledge in gardening spread amongst the public by THE COTTAGE GARDENER, is of less frequent occurrence now-a-days than formerly: that point is the tendency of bunches after they "show" to run into tendrils, or, in other words, to assume what is termed a morphological character. Now, what can this mean? We all know that it is a departure from genuine fruitfulness. Shall we look to the root action for an explanation, or shall we talk about "cold currents" or of "coddling," as a highly artificial course of treatment is called? This much may be affirmed, and most good gardeners will bear me out—that when the root is all right it would take a very clever fellow to compel it to assume this character. Doubtless, then, it is a fault at the root, and where there is one error in the house there are half a score at the root in most cases. Let us here pause to consider what is, nay, what *must be*, the effect of an unusual amount of moisture in the border after a sloppy November and December. The Vine we know is a deciduous shrub, and so is a Lilac or Honey-suckle; but these plants scarcely agree as to the moisture affair—they are of widely different habits. Our shrubs of northern Europe can scarcely get too much of the distilled dew of the skies; but who can say the same of the Vine and some other tropical fruits? Imagine, then, a border, which, albeit proclaimed as "all right" by the constructor, is all wrong in principle; too retentive of moisture; and that "the meeting of the waters" has saturated the soil round the roots, which, by the way, have little need of such unseasonable visitants. Why, in the name of common sense, should we not expect something "rotten in the state?" How can we hope that those delicate organs which gardeners call fibres, and which are used to a different handling in their native clime, should undergo all this without evincing signs of impatience, if not of downright affront?

I will add no more on this head, but leave it rather to the minds of those engaged in such matters to think, and to think with care.

These things disposed of, let us now turn our attention to the condition of the foliage as to insects, fungi, &c. "Legion," indeed, is the most expressive word by which to designate the enemies of the poor gardener, whether he be clad in fur or in a "foul-weather jacket." First, then, comes the fear-inspiring Vine fungus, the *Oidium Tuckeri*, too well known to need description. Surely every one is by this time aware of its insidious movements. As far as we know at present sulphur is the best antidote; indeed, applied in a timely way, it appears to answer most fully the purpose in hand. This pest must be watched for on its first arrival, for it is a most insidious enemy. The sulphur should be dusted over every portion of the foliage and fruit, but in an impalpable manner, for patches of sulphur not properly divided are apt to injure the foliage.

Aphides, of course, do much mischief to Vines, and should not be permitted to establish themselves. As for the red spider the utmost jealousy must be exercised if it appears: here, again, sulphur is the best remedy. These pests, any one or all of them, if allowed to gain a footing, are sure to cause a consequent deterioration of the produce in the ensuing year. Many gardeners are partial to the syringe in vineries, but it is a questionable instrument, especially after the blossoming period. Of course it is antagonistic to the red spider, but the use of sulphur on pipes or flues is always a match for this enemy.

As to the atmospheric conditions requisite for the Vine, I feel assured that in very many instances they are kept too close. I consider that one of the chief aims of the forcing gardener should be to inure his Vines to an atmosphere of a motive character, even to a puff of wind occasionally when not too sharp. Such advice, however, must be received with some little caution when applied to Vine forcing in the early part of the spring. There can be little doubt that the rustiness so often complained of in berries arises, not unfrequently, from a coddling system pursued so long that the skin of the berries becomes so tender as not to endure even a zephyr. The colouring of Grapes, too, how much it depends on a free circulation of air! I do not affirm that colouring cannot be carried out without a constant circulation of air by means of ventilation; under a fortunate concurrence of circumstances we know it may; but the Vine dresser must not rely on this: all our best gardeners are fond of as free a ventilation as the times will permit.

There is much in the colouring of Grapes that puzzles the best of gardeners. On paying a visit to my good friend Mr. Hill, of Keele Hall, last autumn, an account of whose excellent gardens I gave in THE COTTAGE GARDENER, I saw a case which I could not account for, and which perplexed Mr. Hill himself. It was that of a noble tree or two of the new Barbarossa Grape. The tree was in most exuberant health, with some enormous bunches; but these bunches did not seem disposed to colour thoroughly at the time, although I believe they afterwards much improved. The edges of the foliage had already turned of a golden colour, which unpractised eyes would off-hand have termed "burnt;" but Mr. Hill is not the man to burn Vines, and as all his other Grapes were so truly magnificent, of which the exhibitions were witnesses, I felt sorely puzzled at this result, and secretly indulged in an affront against the Barbarossa. Now, I am of opinion that, if a given Vine is required and expected to carry thirty pounds' weight of good Grapes, thirty bunches of a pound each on thirty shoots would colour better than fifteen bunches of two pounds each. It is pretty

well understood, too, amongst gardeners that for keeping properties the small bunches are superior to the large ones; and, indeed, no wonder—they are better “fed,” to use an ordinary garden phrase. This was a favourite plan of Mr. Crawshay, of Colney-hatch, who used to produce such fine winter Grapes. On going there to examine the practice some twenty years since I was somewhat astonished to find two or three shoots emanating from one spur, from what Mr. Crawshay termed “spawn eyes.” The gardener told me that they preferred three shoots with half a pound on each to one shoot with a pound and a half bunch; he said they coloured and kept better.

There are many singular matters connected with Vines and their culture that are but imperfectly understood, and they deserve, in my opinion, every attention. In some future paper I may turn to the subject again.

R. ERRINGTON.

THE BEDDING SYSTEM.

WHEN one of our good old English Lord Chancellors made a new country magistrate out of the old materials of a good sensible country gentleman he is said to have never omitted to give this advice to the new limb of the law: “Decide all cases which come before you according to your own judgment, but never add the reason why you decided that way; for your judgment, though sound and good, may be supported by reasons which may be strictly illegal, and which an adversary might turn against you, and upset your judgment, though ever so good.”

Now, having occupied the woolsack for some years, such cases come before me occasionally. The last of them is at page 177, the week before last. Mr. E. Simons there repeats what I had often said of the bedding system, of the florists, and of the Flower Shows. Each and all of them do and have done a vast deal of harm and a “prodigious” amount of good. In my “capacity” I seldom fail to give the reason for my decisions. Mr. Fish says I always do, and, although I am “bearded” occasionally, my decisions generally carry a high legal authority. This is an appeal day, and I am “sitting” on one case only—that of Mr. E. Simons aforesaid—referred to this court by the Editor. “What will Mr. Beaton say to our correspondent’s heterodox postscript? ‘The bedding system (bad luck to it!) has driven so many herbaceous plants out of cultivation, that when I lose a plant I find it difficult and often impossible to replace it. If the only use of plants is to produce certain effects by the arrangement of different colours, why cannot those effects be produced by painted boards or posts?’”

Here, then, is another good example of a sound judgment being controverted by false reasoning. The bedding system has thrown many good plants out of the trade, and it is indeed very difficult to find them when one happens to lose them. The Flower Shows have been still more arbitrary, and the florists the worst of all. Why, therefore, on Mr. E. Simons’s way of reasoning, should not wax flowers do at the shows? Wax flowers would save the florist a world of trouble; and why should Mr. E. Simons bother himself about long-lost “herbaceous” plants? If he is satisfied with them without producing effect, would not their names written in his garden book be quite as good for him as painted “boards and posts” would be to us and ours?

The most popular bed of this season is the Nosegay bed; it has also been the most popular bed since 1840, when I first took to it at Shrubland Park—the pink Nosegay. In 1844 Mr. Fleming sent me his lilac Nosegay. Again, in 1856, he sent me a “red Nosegay,” with this question: “Is not this the Horseshoe Crimson you say

is lost?” “No,” said I; “but it seems a good one, and is of a different section, that of the old *Fothergillii* of Sweet, alias Nosegay of gardens. Your plant was not known to Sweet, and comes very near an older Nosegay which was figured by Andrews under the name of *Bentinckianum*. Pray give me the history of your Nosegay.” He answered thus: “The red Nosegay is an old one raised by Mr. Patrick, gardener at Stoke Pogis, Bucks: it is little known except in that neighbourhood.” Sweet writes that his *Fothergillii*, alias Nosegay, was a Cape species. Andrews said the same of his *Bentinckianum*; but from some revelations by dusting pollen I suspected both of them were wrong, and that if I could procure a kind which I thought was lost, but which was common in their days, I thought I could prove them to be wrong, for without proving a pudding one may as well do without it, and take dry bread and cheese. I have the legal proof in my hands that they were mistaken; the Nosegays are an English race. I have made the old Nosegays over again; the one of them which I firmly believe was common in Miller’s time is an improvement on Mr. Patrick’s plant, and there is a full bed of it in flower now in the Experimental—a very effectual bed, which no paint or painter could give on a board or post. I call it *Miller’s Nosegay*, to distinguish it as one of the three original Nosegays. Patrick’s plant will give a good idea of it; but, to make sure that I was not deceived by Mr. Fleming’s young plants, I brought flowers of both kinds for him to decide at the Crystal Palace Show last autumn, and after his decision I left the plants of Patrick’s seedling to the frost. *Miller’s Nosegay* will stand as the darkest shade of red. There is a red Nosegay in the nurseries; I saw it at Pine Apple Place Nursery last May, but I never had a bed of it. It is the *Fothergillii purpureum* of Sweet’s Geraniaceæ, and cannot be distinguished from the pink Nosegay, which is a purplish pink by growth or leaf.

Mrs. Vernon is a good Nosegay for the centre of a bed. It has a large truss and clear reddish pink colour, but the flowers are very thin. *Frewer’s Nosegay*, I believe, was raised by a nurseryman of that name in Stowmarket. I had it from Shrubland Park, and saw it there last autumn. It is a red flower, and is not so good as *Mrs. Vernon*.

It is curious that the taste for Nosegays never became general till the French poured in their broad-spotted Geraniums, although they were considered the best kinds throughout the last century. The father and grandfather of the present generation of Hendersons told me that all along they had to propagate a certain number of Nosegays for a section of the Pine Apple Nursery customers, who preferred them to all others. At first they were sold as “Green’s Seedlings,” and, being then the only kinds with large trusses, they got the name of Nosegays. Sweet named them after Dr. Fothergill, but at the same time retained their popular garden name of Nosegays. And now what will Mr. E. Simons say to the ladies, who prefer them on account of the light and airy way they seem to give what painters call “light and shadow” to effective pictures in massing beds? Why, any good painter could give light and shadow on a flat board, to be sure.

The Variegated Nosegay at the Kingston Nursery must have some other name down the country, where it was picked up without a name, and any one who can prove a claim to a previous name is welcome to it. This is the only Nosegay I have seen among variegated Geraniums. Last year I told of the quickest way to catch a new variegated Geranium by taking advantage of “sports”—to cut down a plant to a branch which showed white or variegated leaves—and I instanced a seedling which I thus turned to account. It is now three years old, and has just flowered, and if I can save it I am quite sure it

will be "run" after as the *Golden Chain* was for an edging to the Nosegay beds, being a true pink flower like *lateripes roseum*.

The gentleman who saved the true *Diadematum* Geranium from being lost sent it to me in the spring. It is also in the Wellington Road Nursery, and I see the Messrs. Henderson have it in their last catalogue, saddled on your humble servant for the authority of the kind. I never object to having the saddle on the right horse for good riders, nor grudge a new pot for an old bedder like this.

D. BEATON.

GROWING MUSHROOMS "LARGE, THICK, AND FAT."

"CAN you put me in the way of *improving* my growth of Mushrooms? I have built a house for the purpose, with stove, &c., and believe my gardener uses good spawn, and pursues an approved course of cultivation, watering them and giving other care; but they do *not* grow as I like to see them. I like them to be *large, thick, and fat*, but not spreading like an umbrella; in fact, when cut to be like half an orange or an apple—compact and fleshy, not thin; and when broiled not like a piece of brown paper. In Covent Garden I see what I *do* like."—L. J.

There is no accounting for diversities in taste. Even in a small establishment it is next to impossible for the ablest gardener to please every one. This could only be done by each person having a separate dish of some fancied article, and then satisfaction would only be realised when the *artiste* of a cook could be persuaded to prepare each dish in a certain manner. We meet with people who very sensibly prefer nice green Asparagus, the greater part of which is sweet, tender, and eatable. We meet with others who as much as tell us that such green stuff is no Asparagus at all. Nothing will satisfy them but the Asparagus with the inch of eatable top, all the rest being beautifully white as ivory, and as hard as a kettle-drum stick. I knew a gentleman who looked upon the yellow Maltese Turnip as the queen of esculents; but, though he fumed and fretted, and almost stormed, his tasting his favourite dish was like the visits of angels, few and far between—the controller of the kitchen department *would* cook none but white ones. Who does not know that complaints about this and that kind of Potato frequently regale the gardener's ears, just because those who sod instead of boil them are too great-minded to take a hint from a cottager's home or an Irishman's cabin? So with the Mushroom: much of its quality when served up depends upon the cooking. Unlike our correspondent some prefer even buttons not too thick, and the Mushroom when full grown to be rather flat-headed, because it is easier to cook it thoroughly. Some, again, prefer them thick and fleshy; but then, again, they get tired of the thick and fleshy ones, because the *artiste* either will not or cannot cook them thoroughly. The outside is beautiful they say, but the inside is raw and hard. It matters not though you find no bone in them if you try them yourself by stewing or frizzling. Common prudence demands that, if possible, the gardener should supply the kind of article not that this or that visitor may chiefly prize, but what the head of the establishment who pays him for his labours most desires. Owing to these various tastes I have had to try and get Mushrooms in all gradations, from very thin to very thick and solid. If my experience will be at all useful to our correspondent and others it is freely at their service.

I was once acquainted with a Mushroom house that for years had hardly swelled a Mushroom, and yet the place was rather celebrated for Mushrooms; for, though they could not be got in the Mushroom house, they frequently came so nice of their own accord in the inside borders

of the houses as to take the prize at Horticultural Exhibitions.

At one time I had the management of beds in an Old-acre house, heated by a flue, so far as the preparing of the beds was concerned. Horse droppings were chiefly used, and these were chopped and turned so often, and so mixed with dry soil, that the nutritious qualities were well nigh all driven out of it. We had Mushrooms it is true, but generally thin enough, and in quantity so meagre as would now be deemed a failure. The dryness of the beds, the drying effects of the flue, without steaming and lashing water about, and the heat of the place frequently ranging from 65° to 70°, were the causes of failure. Extra heat will draw out any Mushrooms thin. From 55° to 60° is what I prefer, though I have had fine Mushrooms at from 45° to 50°.

When I first began to grow Mushrooms entirely on my own account I thought over what I had previously seen and done, and, as I found that Mushrooms would be extra desirable in winter, though there was no Mushroom house I resolved on trying several modes, for there was no want of manure; and as all of them were successful, though some more than others, if I draw upon my recollection it is not from any feeling of egotism, but that others similarly situated may get a hint to suit them.

1. Finding, in the month of August, in dung linings that wanted renewing, a good quantity of shortish flaky manure from the stable that had heated itself dry, I had this wheeled to an open spot, shaken and broken well with the fork, and then built firmly in a ridge a yard wide at bottom, and a yard high to the apex: I forget now how many yards in length, but that does not signify. Contrary to my expectation, this dryish wasted material heated rather violently. An old practitioner that I called in to see it advised boring it full of holes to let the heat out; but, as I considered that the material was rather of an open nature, and boring holes would make it opener still, and thus at first rather increase the heat, I preferred beating the bed hard all over, and sprinkling a little soil over it to keep the air out, instead of letting it in, and in a short time the bed gradually decreased in temperature; and when it was about 90°, or the heat of new milk, I inserted pieces of good spawn about the size of walnuts every nine inches equally all over it, placing these bits of spawn about one inch and a half below the surface, and beating that surface well again. The mere hole-making to admit the spawn increased the heat a little, but not prejudicially, and in a few days it was quite fit for earthing up, the thermometer that was on the bed standing at 88°. The garden soil being well stored with manurial matter, and as a necessary consequence not deficient in worms and slugs, the former of which would have prevented the soil of the bed being firm enough, and the latter would have feasted on the Mushrooms instead of my employers, I dug down between two and three feet, and got some stiffish fresh soil from the bottom of the trench, with which I cased the bed about two inches and a half thick, kneading it in as compactly as possible, watering it over, and when a little dryish making it both smooth and hard with a clean spade, and then threw over it a little loose litter to prevent the sun and air cracking it. As the nights got colder a little more litter was used, and ultimately drawn straw to throw off the wet. During autumn, winter, and spring the inside of the bed varied from 85° down to 60°, and the surface ranged from 65° to 48°. In seven weeks from the insertion of the spawn the Mushrooms made their appearance, and continued producing for the best part of a twelvemonth. They were good in kind, but not particular as to thickness.

2. At the same time I put up another bed made of dung that had been worked sweet for a hotbed, but was rather moist, mixed with more exhausted, rather wet

material from the linings above referred to. This heated rather violently at first, but when it declined it felt very clammy and wet; in fact, when squeezed firmly, a drop of liquid would soon trickle through the fingers. I considered that pieces of spawn would soon perish if put into such material. Every piece was, therefore, firmly wrapped in a ball of dryish material similar to that which I had made the first bed of, each of these balls being larger than my two fists. A hole was made for them, and they were firmly inserted in the bed, and covered by an inch or two of the moist dung. This bed yielded Mushrooms so large and so thick that the difficulty was in the cooking of them. The spawn ran freely in the loose, dry litter, and when it got to the richer, moister material of the bed it gave succulence and size to the Mushrooms.

3. Having a lot of tree leaves in November heating nicely and sweetly, I made a bed of them in a shed about eighteen inches deep. On this I put six inches of horse droppings, and, when the heat was all right, spawned and treated in the usual way. This bed retained its heat for a very long period, and the Mushrooms, though good, were inclined to spread and be rather thin. On a similar bed, after spawning, I put an inch of rich, moist cowdung, plastering it all over, and when a little dry soiling up in the usual way. Here the Mushrooms were round and thick, and ever since, when I want fleshy, thick Mushrooms in shallow beds in Mushroom houses, I use the cowdung as a surfacing. It should not be too fresh, or worms and maggots will trouble you and spoil the firm surface of the bed. If cowdung is not at hand I use a surfacing of fresh, damp horse droppings; but I do not think them quite equal to the cowdung for producing this result.

4. Though approving, for shallow beds in houses, of the drying and turning of horse droppings, yet I was so convinced that this might be done to an injurious extent, so as to deprive the manure of much of its nutritive qualities, that I tried a bed without giving the droppings any preparation at all. These droppings were brought direct from the stable, rejecting those that were extra wet, and having as much bulk of litter as droppings. These were spread into a bed in an open shed about three inches thick, well trodden and beaten, and a sprinkling of fibry soil thrown over that was dry, rather than moist. In three or four days two inches more of the droppings, &c., were added, and another sprinkling and beating, and so the process went on until in about three weeks I had a bed nearly fifteen inches deep. The using the manure rather dry, the addition of the dry earth, and the thorough beating each time prevented the bed heating very violently, though it was so hot as to require to stand the best part of a fortnight before it could be trusted with the spawn. This bed was earthed in the usual manner with fresh soil from the bottom of a deep trench in the kitchen garden, and yielded continuously for a long period a fine crop of Mushrooms. A piece at one end was surfaced with two inches of cowdung that had lain in a heap three or four months, and had lost its rankness, and from this part the Mushrooms were thick and round, and the cook complained that it was impossible to cook them thoroughly. With suitable protection of litter and mats these beds produced liberally all the winter.

5. Fearing that these beds referred to might be injured by some sudden extreme frost, and knowing that uncovering such beds out of doors was no very pleasant affair on a rainy or a snowy day in winter, I also made beds on raised platforms in stock-holes, so that the fire used for keeping out frost in the houses in winter would keep the beds all right. I found that these beds were the better for a moist surfacing after spawning, and that they did very well, with a little covering of litter to keep an equal temperature, until the stock-hole became too

hot, when forcing the houses commenced. I also made beds on the floors of vineries and below the stages of greenhouses, and found they gave much less trouble than in any other circumstances, as little covering was necessary, and could all be done in the dry and comfortably. Of course, when the heat of the vinery was raised to 70° or so, there was an end to fine fleshy Mushrooms.

6. Among other methods I tried them in portable wooden boxes three feet in length, fifteen inches wide, and the same in depth; and also in large pots, using chiefly horse droppings and dried cowdung, and found them useful when placed in a forcing house not too hot, or in a greenhouse at the warmest end, &c. An amateur who would be beaten by nothing had an almost constant supply from large pots all the year round, and had neither a close shed nor glass house to keep them in, and the droppings of only one pony to depend upon; but he had a good deep cellar, cool in summer, and warm in winter, and there his pots were placed when prepared and finished. From him I learnt the importance of such a cellar, or a cool, airy place beneath the thick shade of trees, for growing Mushrooms in summer.

7. I need not mention spawning Cucumber and Melon beds, or inserting spawn in beds intended for early Carrots, Vegetable Marrows, &c., as these are just so many make-shifts. It will be seen that I do not attach so much importance to what the material used is, provided it heats moderately and retains its heat. However, I have my likings when I can realise them. For all shallow beds in houses, then, I prefer horse droppings moderately dried, obtained from stables where the horses live chiefly on good grain. To this I would add a little dry, fibry, fresh soil, and about a third, if I could get it, of dried cakes of cowdung, sheep-dung, or deer-dung. These will make a first-rate mixture for producing rich Mushrooms. The bed should be spawned of course, though with such a combination, and care taken to prevent extra heat, I have seen the whole bed without spawning like a huge cake of the finest spawn. It is seldom I can get materials or spare time for such a bed; but I have no hesitation in saying that such a one, a foot in thickness, will beat an ordinary one of droppings of eighteen inches. If extra fatness is desired, cover with from one to two inches of moist, but not too fresh cowdung before soiling; but do not blame me or the gardener if you find the centres hard when cooked.

Two words more. If Mushrooms are grown in a house, some cover the beds and some do not. When I want them early, and also to prevent the beds cracking, I use a little clean litter or dry hay, removing it when the spawn works through. I have already mentioned temperature. When fire heat is used let the atmosphere have plenty of moisture. I am rather in favour of the Mushrooms having a little light and a circulation of air; but on the whole, unless for particular people, light or darkness is of little moment. They will be white when grown in the dark.

Secondly, two enemies are apt to be troublesome in houses, or rather, three—*mice*, that burrow in the beds, and which must be trapped, poisoned, or catted; *slugs* and *snails*, that will riddle the best spawns, and which must be enticed with brewers' grains, buttered cabbage leaves, and hunted for with a lantern at night; and *woodlice*, which are very troublesome. I have caught great numbers of them in small bellglasses sunk below the level of the bed, and baited with boiled carrot or potatoes. They will be seen in the greatest number when you have a slight covering of litter on the bed. Have some boiling water ready, and a fine-spouted small pot. As soon as you uncover they will scamper to the side, and get into the cranny formed between the bed and the wall. Pour the water close to the wall, and those touched will trouble you no more. R. FISH.

THE STEWARTON SYSTEM OF BEE-KEEPING.

I ANNEX the weights of the three selected hives taken on the 15th of June:—

No. 1	32 lbs.
2	27
3	25

Since I last wrote the weather has been magnificent, but I have had no swarming, although that work is likely to commence in a few days. The hives have not yet been altered in any way.—ROBERT WILSON, *Stewarton*.

REARING BULLFINCHES.

I SAW in a recent number a request from a correspondent to be told the method of rearing young Bullfinches. Bullfinches should be taken at about five days old, because if they are left longer they acquire the harsh notes of the parents (I presume your correspondent wishes his birds to learn an artificial strain). To obtain nests of Bullfinches

we must look in the deepest, darkest recesses of woods, in the lower branches of the Pine tree. The young birds must be fed on the crumb of white bread soaked in warm milk, mashed up with soaked rape seed. When older, feed them entirely on soaked rape seed, lettuces, fruit, and millet seed, and above all things let your Bullfinches and all your birds have *plenty of good fresh water*, and red sand at the bottom of the cage.

Feed the *young* birds every two hours, and if it is not convenient to rise at 5 a.m. to feed them, shut them up overnight in a dark place, that they may sleep away their hunger till you are up.

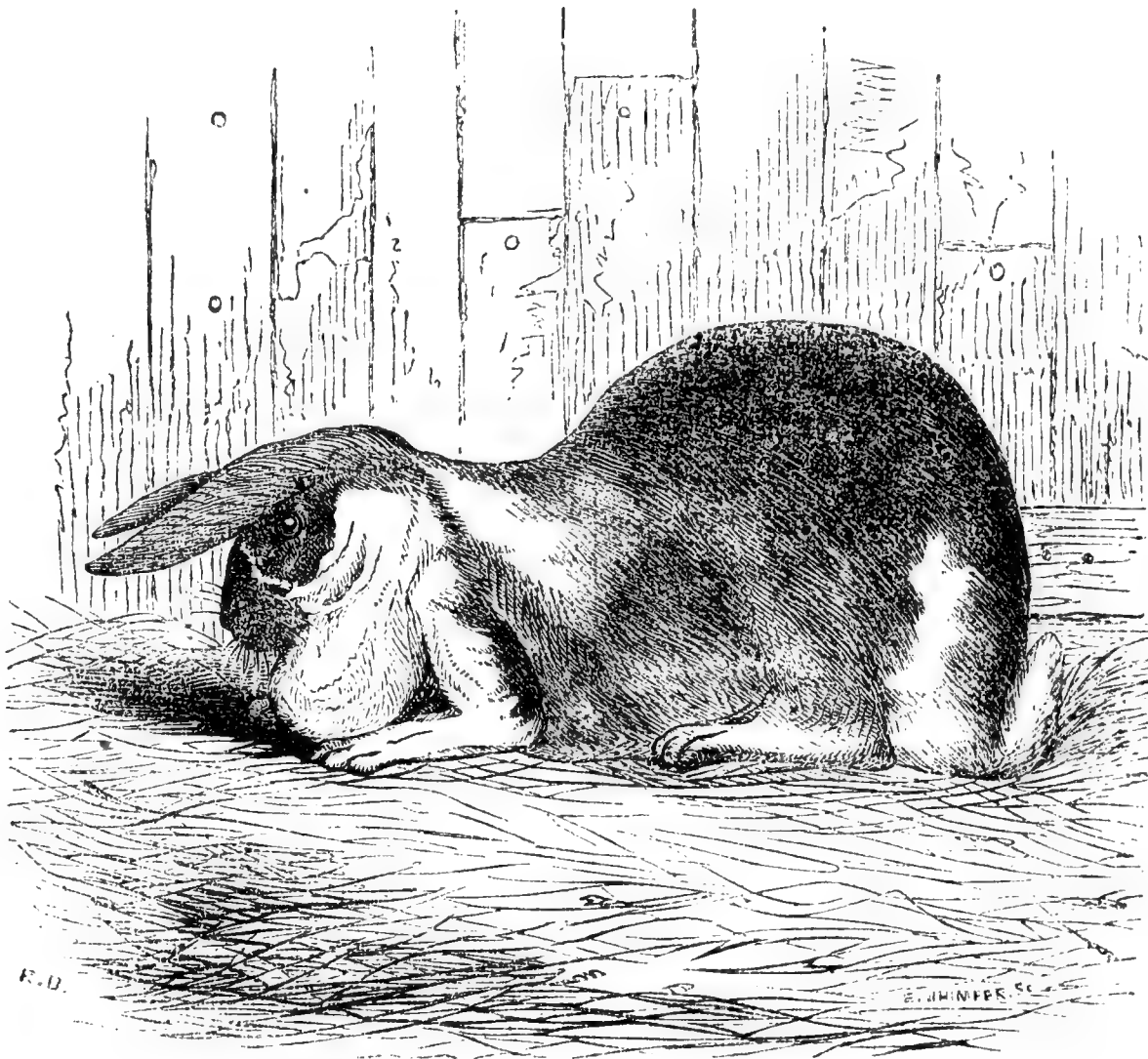
Bullfinches may be taught to whistle airs beautifully if the lessons are given with patience and kindness; and remember that if any one thinks he cannot resolve to take trouble and attend regularly to his birds he had far better at once kill them out of their misery.

If you think you would have space I would write more directions gradually for rearing all our best birds.—AMATOR RURIS.

[If founded upon your own experience we shall be very much obliged by your proffered notes, as we are by the above information relative to Bullfinches.—ED. C. G.]

FANCY RABBITS.

THE HORN-LOP.



THIS sub-variety of the Fancy Rabbit takes its name from the very peculiar position in which the ears are carried, for it droops them forwards and a little downwards over the eyes, resembling, on the whole, the horns of a cow.

Like the "Oar-lop" this Rabbit may be produced by first-rate parents of the "Full-lopped" variety, and, like the Oar-lop, it may, by judicious mating, become the parent of first-class stock; but more frequently it is the result of a cross with the common Rabbit, which will evidence itself even through many generations, especially in the toughness and general firmness of the ear. When it is the result of such a cross the ear will be found thicker in substance, and not so semi-transparent as in the more highly-bred animal. The veins will not be so prominent, the hair on the outside of the

ear will be thicker and longer, and the ear itself will not be so broad in the centre and so tapering at the extremity as in the thorough-bred specimen. But, although it is well to bear these circumstances in mind, I do think that it is impossible at any time to decide satisfactorily whether a Horn-lop be the produce of a pure strain or not, unless that strain be perfectly well known. The Horn-lop is not so frequently met with as the Oar-lop, but is not on that account to be more valued; for, on the other hand, I think its general appearance is more likely to impress an inexperienced judge with a conviction of its greater purity of blood, which is not by any means the case. In colour, form, size, and habits it resembles any other variety of the Lop-eared Rabbit.—PERCY BOULTON.

HAIL-STORMS.

On Saturday, June 6th, the parish of Cossey, near Norwich, was visited by a most severe storm of hail, or rather, lumps of ice. Previously to this the day was very hot: at two o'clock the thermometer stood at about 86° in the shade, the wind was south, and thunder was heard in the distance. After the wind changed to the north, and the heat was less by as much as 15° or 16° , about half-past four my attention was called to a loud noise from the south like the roaring of the sea, increasing both in mist and darkness as it passed over and through the trees. I soon discovered it was a storm of falling ice by seeing some large pieces dropping in the river, which appeared as if stones were thrown into the water. I had hardly time to turn round before the same began to fall on the hothouses like grape shot, and to my grief I saw "Glasgow;" but, most luckily, the storm was by this time partly spent, otherwise the damage must have been very serious. As it was there were about 400 squares broken and cracked, some of which were of sheet glass, but of course the thin sort suffered the most. Some of the latter were pierced through as if holes had been cut out with a diamond.

Like most of such storms, this one seems to have been of a local character. It appeared to have commenced about six or seven miles off, and approached winding in some instances hardly a quarter of a mile in breadth—at least, such was the case here—and was confined chiefly to the east end of Lord Stafford's park. There was none of it at Babur to the south, and it scarcely reached Taverham to the north, none at Easton, and the tail of it fell only at Drayton. I noticed that the storm came up against the wind, which thunder-storms often do; also that it was not hail, but large pieces of ice, some of which were three inches round, plenty of the size of walnuts, and of all kinds of forms, though chiefly of a flat tortoise shape.

The cloud did not appear to be very high; yet the hail fell with great force, and caused considerable pain when it struck a person, as it did me. The weight and force of some of the pieces of ice were sufficient to break strong sheet glass, as already noticed. I trust that this may warn all who have glass structures to insure against the risk of such damage, not only as regards glass, but the crops of fruit and plants under its protection.—J. WIGHTON.

NOTES FOR JULY.

THE principal business in the kitchen-garden department during this month will be to *trench* or to dig deeply every spot of spare ground, to be filled at every favourable opportunity that the weather or other circumstances will permit with Brussels Sprouts, Winter Greens, Green Kale, Savoy, Cabbages, Broccoli, &c.

To aim, with a fair hope of success, at a good crop of *Strawberries* every season, it is advisable, when they have borne crops for three successive years on the same ground, to make a fresh plantation of young plants, or of such as had been forced; the soil, a stiff, loamy one if possible, to be trenched and well manured two feet in depth. Young plants from runners can now be easily procured to prick out into a bed enriched with a good portion of rotten dung about four or five inches apart, preparatory to their final transplanting in the autumn to the beds in which they are to fruit.

Dwarf Kidney Beans to be earthed up, and every pod fit for use to be gathered, by which a succession will be obtained for a much longer period than if even a few pods were allowed to ripen, as nature, in its repeated efforts to perfect its kind, produces a succession until it can go no further. *Winter Onions*, *Shallots*, and *Garlic* to be taken up and dried for storing. Continue to supply *Asparagus* beds with liquid manure; indeed, everything vegetable during its season of active growth will derive immense benefit from the liberal application of liquid manure. A mulching of short grass, or any other short litter, will prevent rapid evaporation, and the surface from being caked or hardened by exposure to the sun. *Celery* to be attended to by removing the offsets, soaking it with water, and earthing up as it may require. A good breadth of *Spinach* sown now in

rich ground will afford many successive pickings in the autumn, and tend materially to save the winter beds from being picked before they become strong.

The instructions given in former notes on the summer treatment of *fruit trees* should not be forgotten, as the proper maturation of the wood and the organisation of the fruit-buds will be more certainly insured by the removal of the useless spray and the breast wood, for the admission of light and air. Out-door *Vines* and *Figs* to receive attention in stopping and training the shoots as open as possible, to give them the benefit of sun and air. The thinning out of the superfluous shoots of *Gooseberries*, *Currants*, and *Raspberries* should be no longer neglected, leaving only sufficient to furnish next season's crop. The extremes of heat and cold are always unfavourable to vegetable growth, as the flower gardens of this season too generally attest.

Complaints of the unkindness of the season are loud and deep. Bedded-out plants are making little or no progress, and to coax them into growth our suburban neighbours, as soon as the surface of the beds or borders is dried by a scorching sun, and a drying wind like a sirocco licking up the moisture, it is watered every evening, which produces cold and stagnation at the roots, when they become sickly and infested with insects. If, from the drooping appearance of the plants, water is necessary, it should be supplied copiously to moisten the soil to some depth, and then to be discontinued for several evenings, or until unfavourable indications suggest another supply. The *budding of Roses* will require attention, and when the bark rises slowly the application of liquid manure will cause the sap to flow more freely.

Cuttings of Antirrhinums, Phloxes, Pentstemons, Alyssums, and of other such showy herbaceous plants, take root readily under the shade of a north wall. *Evergreens* to be looked over and pruned as required. The pegging down of plants intended to be kept dwarf, the tying up of others, and the keeping the surface of the beds loose and free from weeds until it is covered by the growing plants, will comprise the routine of operations for a few weeks.

Pink pipings, like all other things in the garden, have not succeeded well this season; but by perseverance in the method recommended last month a good supply of these sweet and beautiful flowers may now be obtained. Advantage to be taken of showery weather for transplanting them into beds or borders of good and well-dunged soil. The pods of any choice sorts to be thinned, and the remainder to be tied to small sticks, and protected from rains to ripen their seed. *Carnations* and *Picotees* will now be in perfection. When the shoots are sufficiently long layering may be commenced. This is performed by inserting the knife a little below the second or third joint, and carefully cutting it about half an inch in length upwards. The small portion of stem beyond the joint is cut back to it, and when pegged down in the soil, which should be fine, light, and rich, it will in due time emit roots. *Polyanthuses* delight in a shady situation, and to be watered with a fine rose in dry weather, to prevent the ravages of the red spider.

Carnations, *Dahlias*, and almost everything else, are infested with the *aphis*, or green fly, this season. The most effectual plan to destroy them in a small place is to brush them off with a stout camel-hair brush, and to ply the syringe frequently in large places, where the other process may be considered too tedious. The seed-pods of the best sorts of *Pansies* to be gathered as they ripen, and dried in a shady place. *Dahlias*, when they have attained a good size, to have their side-shoots properly thinned out, leaving only three or four of the strongest and best. Soot sprinkled on the foliage and around the plants is a preventive to the ravages of earwigs; but the old and well-known system of small pots on stakes is most effectual, by regular attention, for their destruction.

When *Pelargoniums* have done blooming they are exposed for a fortnight in an open, airy, but sheltered situation to mature their wood, when they are cut down to the first or second eye at the bottom of each shoot, and then returned to the greenhouse, where they are kept rather dry, until they begin to push forth fresh shoots. The old wood is cut up into cuttings two or three inches long, and inserted in any light garden soil in the open ground, on a level surface fully exposed to the sun, where, with a little attention to

watering in dry weather, they will soon strike root. *Scarlet Geraniums* will succeed in the same manner.

Fuchsias, *Japan Lilies*, *Heliotropes*, *Cockscombs*, *Balsams*, and other such greenhouse plants suitable for producing a succession of flowers during the summer and autumn months, to be encouraged into luxuriant and healthy growth by shifting all such as may require it into larger pots; to be attentively supplied with water, and occasionally with liquid manure; to be syringed in the evening when the house is closed, and the syringing to be discontinued as soon as the flowers expand. Plants during their season of active growth require most watchful attention to supply them with the agents necessary for, and to protect them from influences adverse to, their healthy vegetation.

Cinerarias intended for winter bloom, whether seedlings or suckers, should be potted forward without delay. *Camellias* will now, in general, have formed their flower-buds, when they may be supplied with liquid manure occasionally, and receive a general shift. Many other sorts of greenhouse plants that have done blooming, and young plants of luxuriant growth, to be generally shortened in or stopped, that round, compact, and sturdy growth may be now produced. Many of the hard-wooded sorts will now require a shift, when the pots will become well stocked with roots by the autumn.—WILLIAM KEANE.

NEIGHBOUR'S BEE-HIVES.

WE observe in No. 455 of THE COTTAGE GARDENER the following remarks in a letter signed "APIARIAN:"—

"I find that I can have a hive made similar to Neighbour's improved cottage hive, price £1 15s., for about 10s. or less Why will these makers drive all apiarians wishing to keep any number of bees, and with fathomable pockets, to the old system?"

In reply permit us to say that we have hives on the humane system as low as 6s., and an excellent cottager's hive at 10s. 6d. No one purchasing from us is compelled to pay 35s. for a bee-hive; but when that price is paid it commands a superior and well-finished article, complete with bellglasses, windows, thermometer, &c., and the very increasing demand we have for our hive of this description is surely an evidence that the price asked is not exorbitant.—GEO. NEIGHBOUR AND SONS, 127, High Holborn.

MEETING OF THE ENTOMOLOGICAL SOCIETY.

THE June Meeting of the ENTOMOLOGICAL SOCIETY was held on the 1st of that month, the President, W. W. Saunders, Esq., F.R.S., being in the chair. H. Gorham, Esq., was elected a member.

Mr. Frederick Bond exhibited a very fine series of the rare but destructive Moth, *Retinia Turionana*, reared from larvæ found feeding on young shoots of the Scotch Fir at Black Park, in Buckinghamshire; also the living larvæ of two case-bearing Moths of singular habits, belonging to the genus *Coleophora*, found on Oaks in Richmond Park, namely, *C. curripennella* and *C. palliotella*, the case of which latter is furnished with two large valves like cockle-shells, made by the inclosed larvæ.

Mr. Ianson exhibited a number of small but rare or new species of Beetles recently taken near London, including *Bostrichus bispinus*, found in the dead stems of the Traveller's Joy, and *Homalota confusa*, found in the nests of the Dusky Ant, *Formica fuliginosa*.

Mr. F. Smith, now that the attention of entomologists was directed to the investigation of Ants' nests with a view to the discovery of the many rare species of Beetles which frequent them, brought for distribution amongst the members numerous series of British species of Ants correctly named.

Mr. Samuel Stevens exhibited the rare *Stenolophus elegans* and other Beetles, taken at Sheerness at the end of May.

The Rev. H. C. Stowell exhibited a very fine dark variety of the Euphrosyne Fritillary Butterfly recently taken.

Mr. Stainton exhibited the larvæ of the very beautiful and extremely rare Moth, *Hypercallia Christierna*. Having received them from Switzerland, where they feed on a species of *Polygala*, he advised careful search to be made of our British plants of that genus, in the hope of finding the larvæ in this country.

Mr. Foxcroft sent various rare insects from Loch Rannock, including *Dictyopterus Aurora*, with the remark that the sexes of that Beetle differ in the form of their antennæ.

Mr. F. Smith exhibited some oval cocoons like those of the Egger Moth, which he had received as those of the Hornet Moth, and, as they had been found scattered about on a roadway, Mr. F. Smith ingeniously suggested that the grubs of the Hornet, having been thrown out of their hexagonal cells by some accident, had spun for themselves oval cells, in the same manner as they form a convex cap to their cells when full fed. On carefully examining the insect contained in one of the cells, however, one of the members present ascertained that it was the pupa of a species of Humble Bee, the cells of which are oval in form.

Mr. Wilkinson stated that the tissue exhibited at the last Meeting of the Society, and which had been found in the interior of the trunk of a tree, and had been supposed to be the work of insects, was of a cottony fibre, and consequently not an animal production.

Mr. F. Smith communicated a notice by Mr. George Curley on the habits of the Wild Bee, *Chelostoma florissomnis*, which he had found asleep, fixed by its jaws at right angles to dead twigs of a Hawthorn tree, in the direction of the thorns. He also exhibited the nest of a Brazilian Wasp of the genus *Polistes*, brought home by the Rev. Hamlet Clarke, some of the cells of which had been taken possession of by the *Trypoxylon fugax*, which had stored them with spiders for the support of her progeny, thus confirming the observations of Messrs. Westwood and Kennedy on the economy of this genus, and contradicting those of M. Saint Fargeau.

Mr. Newman read the description of a new British species of Dipterous insect, which he had named, in honour of Mr. Bracy Clark, *Helophilus Clarkii*. It had been found rather plentifully on *Scirpus maritimus* in the Isle of Dogs, near Blackwall, upon which occasion Mr. Waterhouse repeated his observations on the practice of published descriptions of isolated species of insects instead of monographs of entire groups, on account of the great trouble it entailed on future monographers.

Mr. Westwood made some observations on the genus *Acentria*, which Lepidopterists now appeared willing to admit into the order Lepidoptera, as suggested by Mr. Westwood twenty years ago. He also gave an account of various works on entomology recently published in Holland, and read the descriptions of several new species of Beetles belonging to the curious genera *Sandalus* and *Lallirhipis*, received from Herr Dohrn.

Mr. F. Moore read the descriptions of six new Butterflies belonging to the genus *Euploea*, contained in the collection of the East India Company.

The President announced that the annual excursion of the Society would take place on the 26th of June to Reigate.

QUERIES AND ANSWERS.

STEPHANOTIS FLORIBUNDA AND PASSIFLORA BUONAPARTEA NOT FLOWERING.

"I have a *Stephanotis floribunda* and *Passiflora Buonaparte* which do not flower. I bought them last year. They are growing in 10-inch pots, and apparently are very healthy; but why do they not flower?"—M. C.

[We presume your plants are yet too young. Give them a pot three or five inches larger, and encourage them to grow freely. Towards autumn lessen the supply of water when they have abundance of sunshine, so as to ripen them well. Then, if at all thick, thin out the *Stephanotis* in spring, and prune back the *Passiflora*, and most likely you will have plenty of bloom next year.]

FERNS FOR A WARDIAN CASE.

"Please to tell me how to fill a Fern case. The part to plant the Ferns in is 20 inches wide, 39 inches long, and 4 inches deep, with a glass to put on it 27 inches high in the centre, and 22 inches to the eaves. What sorts would do the best in it? I want to place it in a little conservatory which is just heated enough to keep out the frost."—ANNIE.

[The first thing you must do is to procure some heath mould in as rough a state as possible; also a few large pieces of pumice stone, or some Derbyshire tufa. The heath soil may be obtained from any of our dry moors where the Heath grows wild; or if you live in London you may obtain from any respectable nurseryman as much as is needful to fill your Wardian case. The soil should be pulled in pieces with the hand, and sifted through a very fine sieve. That which is left in the sieve must be used to fill the space at the bottom of the case for the Ferns to grow in. The pumice stone or tufa is for the purpose of forming miniature rocks inside the case upon the soil, spaces being left between each piece to plant the Ferns in. It would be advisable to plant the Ferns, and place the stones as the planting goes on. If this is neatly and tastily done the Ferns will look quite at home.

Your case is wide enough to allow three rows of Ferns placed alternately, and will hold about eighteen plants. The centre row should be planted with the following six species in this order:—*Adiantum pedatum*, *A. Braziliense*, *Onychium lucidum*, *Adiantum formosum*, *Davallia Canariensis*, and *Doodia aspera*.

The next row may be planted with the following:—*Adiantum tenerum*, *Doodia media*, *Platyloma rotundifolia*, *Adiantum capillus Veneris*, *Lycopodium stoloniferum*, and *Grammitis ceterach*.

The row on the other side may contain the following:—*Adiantum hirsutum*, *Pteris Cretica*, *Asplenium planicaule*, *Lycopodium variabile*, *Allosorus crispus*, and *Cystopteris fragilis*.]

PANSIES IN POTS.

"You will much oblige me by giving some directions as to the treatment of *Pansies in pots*. I have about twenty-four in full bloom, and very luxuriant. They are from cuttings, put in June 13, 1856; potted in small pots, October, 1856; kept under an awning through the winter, and potted in seven-inch pots last April. Will it answer to keep them over until next year and bloom them in large pots? General advice as to their treatment will oblige—AN OLD SUBSCRIBER."

[It is not desirable to keep Pansies in pots for more than one year. Even in the open ground the best florists do away with the plants when a year old; that is, cuttings of Pansies struck last May and planted out in August would bloom during this year, and would be rooted up, and the ground prepared for a crop of cuttings struck this year to bloom next. Now, if this is a good practice in the open border, it is certainly much more so when the plants are grown in pots. We must, therefore, advise you to proceed this year exactly as you did last so successfully.

Your cuttings will now most likely be put in. As soon as they are rooted pot them off singly into three-inch pots, and keep them in such pots through the winter, either under an awning or under glass, in a cold frame, giving full supplies of air and water. Then, about the middle of March, choose the strongest and healthiest plants, and repot them into seven or eight-inch pots in a rich, light compost, consisting of one-third turfy loam, one-third decayed leaves, and one-third heath mould. If you cannot procure the latter make up your compost of turfy loam three parts, and one part very decayed dung; that from the stable to be preferred to that from the cow house. Add sand liberally. Stop the plants, and spread the shoots well over the soil in the pots. If you can manage it layer each shoot, except the central one, in the manner you would a Carnation. Each layer will then be a distinct plant, and will flower much stronger, having not only its own roots, but also its share of support from the parent plant.

The following are twelve kinds that will do well in pots:—

Duke of Perth, dark self.

Sovereign, yellow ditto.

Father Gavazzi, yellow, margined with purple.

Marquis of Bath, yellow, margined with black.

Pandora, yellow and chocolate.

Post Captain, yellow and bronze.

Sir J. Franklin, gold and bronze.

Satisfaction, yellow and crimson purple.

Blue Perfection, white and light blue.

Marchioness of Bath, white, and blue margin.

Miss Walker, pure white, and purple margin.

Royal Visit, white, and dark margin.]

MELONS IN PITS AND VINES IN POTS.

"I have Melons in a four-light pit about six feet wide; the glass is about eight inches by six inches, and common sheet glass. It is heated by four-inch hot-water pipes, and they are laid on the bottom of the pit, which is about five feet deep. The flow-pipe goes round the pit twice; or, in other words, there looks like four pipes on the bottom. When this pit was heated in this way it was with an intention to keep stove plants in winter by my master's late gardener; but I find it a very sorry place for them, as there is no glass but the top lights, and, consequently, not much light. Now, for the Melons I have made a platform or skeleton frame about three feet above the pipes, which platform is made of old rails, and on this is some stable litter, just enough to hold up the soil. The plants are now within about a foot from the glass. This being my first attempt to grow Melons I am anxious to succeed. I have grown them as recommended in a back number of THE COTTAGE GARDENER. They are now grown to within about six inches of the side of the pit, and I have picked out the eyes of all but the last six. The plants look very healthy, but on some of the leaves there appears a black fungus, or something of that sort. When I first put the plants in there was a great deal of fungus came up; I gave them some lime water and it disappeared. Would this affect the leaves?

"In the DICTIONARY you say that in no situation can the Melon endure shade. Do you mean that on hot sunny days they are not to be shaded? I have shaded on hot days for fear they might burn.

"I have also some Vines in pots struck from eyes this spring. My master is desirous of growing Grapes in pots, so I have propagated twelve *Barbarossa*, *Muscat*, *Hamburg*, and *West's St. Peter's*. Will all these sorts do well in pots? They are now in six-inch pots, nice strong plants, about eighteen inches high. I think they want repotting; how shall I proceed? I have read of growing and fruiting them in sixteen months; but as I have not had much practice I should not like to overreach at first. I think of growing them this summer, cut back in the autumn, and grow them next summer for fruiting the summer following. I have means for bottom heat in an early vinery, in which there is a pit for fermenting material, or other places which would be most suitable. What compost should I use, and how should it be placed in the pots?"—E. P.

[We have no doubt that your five-light pit, so heated, will grow almost anything you choose to try in it. We will sum up what strikes us under a few heads.

1. Pits are more economical, but not so good as houses for growing plants in, chiefly because, in ordinary pits, the light strikes the plants from above only. In span-roofed houses the light has access on all sides. In lean-to houses with glass in front and the plants set on a stage the plants have more light and a better circulation of air beneath as well as above them. A span-roofed pit even, unless it has side glass, so that the light may play on the space below the glass as well as above it, is not so good as a house with side lights. A span-roofed pit will also cost more for heating, &c., than a lean-to pit. In such a pit as yours, however, fine plants are grown in summer, and kept and grown in winter. The great thing in keeping stove plants in it is just to give them as much artificial heat as will keep them safe, and nothing more, during the winter; in other words, not to encourage the plants to elongate much until the sun gains strength.

2. The platform for the Melons is purely a matter of

taste. You might have had the soil much lower, and then used a trellis for your Melons. You might have had an open rubble chamber, and thus dispensed with a platform. (See articles and discussions on this matter lately.) As it is we have no doubt you will succeed. Many roads may be safely taken to one desired point, and whatever path a man likes best, that he should stick to.

3. Shading Melons will sometimes be necessary when the plants are one foot from the glass, especially when a very hot, sunny day succeeds a series of dull, cold days. The *DICTIONARY* only warns against *permanent* shade. If the plants were eighteen to twenty inches from the glass shading would seldom be necessary. Even then, however, we should consider it necessary to guard against sudden extremes. This will be more requisite if you have kept up a good heat at the Melons in dull weather. If you have allowed the temperature to fall from 5° to 10° in cold, dull weather, then, as the foliage will be more robust, you will require less shading when bright, sunny weather suddenly comes. These extremes guarded against—and the shading may only be necessary for an hour or two until the plants get used to the change—there can be no doubt that, to have fine-flavoured, good Melons, the less shading they have the better. Had we continuous sunshine during the day, and the plants not too near the glass, and well grown, they would want none. It is sudden extremes that must be guarded against.

4. The general treatment of the Melons seems to have been right. We believe we were the first to recommend such a simple mode of cultivating the Melon, and we have never found any more successful, and that involved less trouble. After the plants are stopped first in the usual manner, we then select the number of lateral shoots we require—two, four, or more—removing all else as soon as they appear. Those left are encouraged to grow on to the sides of the frame, or rather, to within eight or ten inches of it, when the point is picked out. As they grow, every bud at the axils of the leaves, what you call *eyes*, is removed, so as to save cutting and pruning afterwards. From four to six buds or so are left at the end of the shoot, just behind where it was stopped. Mind, these buds must be left there, or you may whistle for a crop. A clever young fellow once picked out every bud, and left me nothing but good shoots and fine leaves. The lateral shoots that come from these buds so left will generally show fruit at the first or second joint, and must be stopped at the joint above it, or at it, and if they do not show must be stopped all the same. The great thing is to get as many of these fruits as thus show to set at the same time, for whenever one Melon on a plant begins to swell it is next to impossible to get any more fruit to set. When, therefore, we have required five or six fruits on one plant, we have frequently removed an early fruit to get the requisite number. This setting simultaneously is greatly promoted by the mode of disbudding referred to. The buds left near the point of the shoot start more regularly, and there is more strength in the vine than if the shoots had been stopped irregularly or much earlier. A dry atmosphere is of importance when the fruit is in bloom, and whilst fecundation, artificially or otherwise, is taking place. We prefer, then, that the surface of the bed should be dry, even should means be taken to keep moisture at the roots by making holes, or, as in your case, supplying moisture to the chamber beneath them. When the fruit is set the plants should have several waterings; but keep a dry atmosphere again as the fruit approaches maturity, or you may find some fine ones rotten and splitting from excess of moisture.

5. The fungus of which you complain was, no doubt, either in the dung above the platform or in the soil. You did right in using lime. No fungus that we have met with likes it. Some time ago we saw a Mushroom bed infested with snails rendered useless by a heavy watering of lime water. Sulphur fumes, by rubbing a paint made of flowers of sulphur on your pipes, would also have been useful.

6. VINES IN POTS.—You will no doubt succeed in fruiting them well, with fair management, in the spring of 1859; but as the season is pretty well before you we would advise trying some at least, to get them in in May or June, 1858. Whether you resolve on this or not, adopt the following process, and the strength and ripeness of your wood must

decide upon your future plans. Supposing your plants are well rooted, turn them at once into nine-inch pots, just pushing off a little of the outside of the ball, that the roots may have free entrance into the new soil. Place the plants in a sweet bottom heat if possible, and give them every ray of sunshine they can get. In six weeks or two months shift again into twelve or fifteen-inch pots. Give bottom heat, and treat as before. For the whole matter of stopping and removing laterals, study a late article on that subject. Fine plants may be obtained by growing them on shelves with plenty of heat, moisture, and light; but we prefer sweet bottom heat when we can get it. By September get the plants out of their plunging medium, give less watering, encourage ripening of the wood rather than making more, and by the first week in October get the plants out in front of a south wall, mulching the pots if the weather is very hot and dry, preferring this to much watering, and even adopting means for throwing off from them the autumn rains, giving no more moisture than will just keep the leaves from flagging when the sun is hot. By November remove them for two or three months to a cool north aspect, where they will be protected from heavy rains and the severest frosts. When taken in force them very gradually, and give a start to the roots first.

In potting use fresh, coarse, fibry loam, with some bits of lime rubbish, charcoal, and dried cowdung or leaf mould, chiefly for keeping the compost open. Drain well, and pack such rough material (from which the dusty matter is excluded, except for throwing a little over the surface) rather firmly with the hand, and depend chiefly for vigour on manure waterings. You will find many minute details in previous volumes.

KINDS FOR POT CULTURE.—Sweetwaters, Muscadines, Hamburgs, and Frontignans are best for pot culture. For early work, in pots or otherwise, we prefer the Sweetwater. We certainly should never think of fruiting West's St. Peter's, Barbarossa, or even Muscats in pots, where, as in your case, there are vineries.

We like to encourage growing Grapes in pots, though we have never recommended it for its economy, unless under peculiar circumstances before Vines come into bearing in regular houses. You can only succeed by giving the plants plenty of light and space one year to fruit early the next. The same space, supplied with established ones, would give fruit every year at a tithe of the expense. In order to get some early fruit easily I planted some weak young Vines in the spring of 1856 in a pit heated by hot water. These pleased me so badly that, emboldened by what Mr. Thomson did at Dalkeith, I cut them right back in July, and removed the soil, and put fresh soil to the roots. They matured rather small, but very short-jointed new wood before the autumn, and bore a very heavy crop, from which I have been cutting these three weeks. They are Sweetwaters. The fruit was so valuable and good that I did not like removing much of it, so that I fear the Vines will not do much the next year, as they are making little wood; but a good part of the year is yet before them, and if they succeed, which I do not altogether despair of, they will cost little trouble in comparison of Vines in pots.—R. FISH.]

PINCUSHION BEDS.

"I want to have six beds on my lawn, with Roses in the centre, as described by Mr. Beaton in his article on Pincushion Beds. The beds will be three feet in diameter. Can I get Roses with large heads, as I do not want to bud, but to make a show next summer? I want the heads to train over hoops. Will you tell me of six good showy Roses? I am not at all particular as to their being new kinds. I should like good full foliage, as I do not think the finest Rose looks well with scanty leaves."—KATE.

[The pincushion beds are altered to four feet in diameter, and the Roses have improved in a most extraordinary manner. It is most certainly the best hit we have ever made. We would not, on any account, train the heads of standard Roses as you propose; it is unnatural, and the Roses will have an upright growth or none. Make use of *Paul Perras* and *Paul Ricaut*, with *Baronne Prevost*, *Auguste Mie*, and *Géant des Batailles*.]

ORNAMENTAL CONIFERS.

"I have planted on a sloping bank opposite my house, near Glasgow, *Cedrus deodara*, *Cedar of Lebanon*, *Araucaria imbricata*, *Pinus nobilis*, *Weymouth Pine*, *Cryptomeria Japonica*, and *Taxodium sempervirens*. I want a few more Pines for ornament, and should value much those you would recommend. The exposure is a northern one, and I must have hardy Pines. My object is entirely ornamental, and, from what I have already planted, I am partial to Pines. The bank is not of large extent, and three or four kinds are all I have room for. Be pleased to name the Pines in the order you esteem them."—AN OLD AND REGULAR SUBSCRIBER.

[Add *Pinus Benthamiana*, *P. insignis*, *P. pinea*, *Thuja gigantea* or *Cupressus macrocarpa*, or both, *Abies Douglasii*, and *A. Morinda*.]

TO CORRESPONDENTS.

UNITING SWARMS OF BEES (*A Novice Indeed*).—It is quite practicable to unite two swarms of bees, but it must be done within two or three days, or before more than a very few combs are made. On the evening of the day of the second swarm's appearing place a table covered with a cloth in front of the first hived colony; by a smart stroke the bees of the second can be dislodged, falling in a lump upon the cloth. Place the first hive over them, raising it a little at bottom, when the families will generally unite without much commotion, and early in the morning restore the doubled hive to its original position. Some persons like to puff a little smoke into both hives previously.

STRAWBERRY SEED (*An Inquirer*).—Buy our 399th number; it contains full directions for saving and sowing the seed, raising plants, &c.

GARDEN WORK (*J. S. P.*).—We could give no answer that would not be liable to mislead you unless we knew the exact amounts of each garden, lawn, walls, &c. If a master's heart is in the right place, and he sees that his gardener is assiduous, he never refuses to allow all needful assistance.

ENCYCLOPEDIA OF PLANTS (*An Apprentice*).—Mr. Petheram, bookseller, Holborn, is likely to obtain for you a second-hand copy.

NAMES OF PLANTS (*Clericus*).—1. *Cerastium tomentosum*. 2. *Dielytra spectabilis*. 3. *Celsia*, probably *arcturus*, but we cannot be certain without seeing the leaves. (*G. R. F.*).—Your plants are, No. 1. *Astrantia maxima*. 2. *Astrantia minor*.

SOWING VIOLETS (*W. G.*).—Sow the seeds of sweet Violets, single ones of course, any time in July, or in February, March, and April, and they will come as thick as grass.

DOUBLE SAXIFRAGE (*F.*).—We have only one plant of it, from the Rose Bank Nursery, Edinburgh; and the Golden Stonecrop perished on the way, so we have none of it.

SOWING IRIS GERMANICA (*G. R.*).—There is not a man alive who could from experience answer your question. It is more than 300 years since *Iris Germanica* has been raised from seeds "on purpose." It increases by far too fast for most gardens by its creeping roots; but sow the seeds the moment they are ripe, and if they come up next spring you will see them, and unless they do not come till the second spring you must wait for them, and when they flower please to let us know.

VARIOUS (*A Constant Reader*).—1. September is the best time to clip a scarlet Hawthorn into shape, and the effect of the clipping on the bloom will depend on the strength or weakness of the roots. If the tree is very strong cut as little as possible; if not strong cut freely, and the more you cut "in reason" the better the bloom. These Hawthorns are just like Apples and Pears in their nature for bloom. 2. The double Tulips have been grown too long on a soil which does not suit them. They never degenerate on Tulip soil, but no one can guess a right Tulip soil without a trial. All you can do is to put some fresh soil in the bed or border, or to plant them in a different part of the garden. Avoid the folly of experimenting on them with liquid nostrums, or any solid stinking stuff. Nothing will do them so much good as clean virgin soil from a loamy common. 3. Cabbage seeds and the like seeds will keep good two or three years or more, but, like the salt we use from the Bromsgrove Works, they are better "fresh and fresh" from each harvest. 4. We have no experience of sea-weed on meadow land.

MANURING SHRUBS (*Rector*).—Bone dust and guano, mixed in the proportion of four bushels of the first to one bushel of the second, would benefit the shrubs. We should remove the surface soil two inches deep over the roots, sprinkle about each shrub a pint measure full of the compost, and cover it over by returning the surface soil. We find house sewage one of the best of applications to hardy shrubs of all kinds.

DAHLIA STAND (*A Novice Indeed*).—A box to exhibit Dahlias in should be made of light deal painted green. It should be nine inches deep at the back and seven inches at the front. To hold twelve full-sized blooms it should be at least twenty inches long and fifteen wide. At each corner of this box there should be a square piece of deal firmly fixed, reaching so high as to leave three inches clear below the lid. These pillars are to support a board, and this board should be pierced with twelve holes, four in a row, and consequently three rows deep. These holes must be wide enough to receive water-tight tin tubes, with a border to each to fit close down to the board. Then procure twelve plugs, made either of wood or cork, to fit rather tightly into the tubes. Through each of these plugs bore a hole just wide enough to allow the flower-stem to be drawn through. Handle the flowers by the stem only, for the least touch of the petals will spoil them. Fill each tin tube or bottle in succession, and when all are filled drop the board gently within the box, and secure it in its place by a peg at each corner, thrust through from the outside. Then shut down the lid, lock it securely, and you may carry the flowers a hundred miles by rail as safe and as fresh as when they left home. Boxes of this size are more convenient than larger ones. If a stand of twenty-four dissimilar blooms is required it is easy to place two together to form that stand. We would advise "A NOVICE INDEED" to cut his flowers the night previous to the exhibition day. If the dew is on them they will keep fresh much longer.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JULY 8th, 9th, and 10th, 1857. LEAMINGTON. Sec., Thomas Grove.
JULY 9th. PRESCOT. Sec., J. F. Ollard.
JULY 20th. ROYAL AGRICULTURAL SOCIETY. Salisbury. The Exhibition will be open to the public on the 22nd.
JULY 28th, 29th, and 30th. SHEFFIELD, SOUTH YORKSHIRE, AND NORTH DERBYSHIRE. Sec., William Henry Dawson, Fig Tree Lane, Sheffield.
AUGUST 8th, 10th, 11th, and 12th. CRYSTAL PALACE. Sec., W. Houghton.
AUGUST 19. BRIDLINGTON. Sec., Mr. Thomas Cape.
AUG. 29th. CALDER VALE. Sec., W. Irvine, Esq., Holmefield, Halifax.
SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.
SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Sec., Mr. H. Churchill, King's Head Hotel.
OCTOBER 1st and 2nd. WORCESTER. Sec., Mr. G. Griffiths, 7, St. Swithen Street, Worcester. Entries close Sept. 19th.
NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.
DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.
DECEMBER 30th and 31st. BURNLEY AND EAST LANCASHIRE. Entries close December 1st. Secs., Angus Sutherland and Ralph Landless.
JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.
JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.
N.B.—Secretaries will oblige us by sending early copies of their lists.

GAME FOWLS—THEIR VARIETIES AND OTHER POINTS.

YOUR correspondent "NEWMARKET," replying to my second communication on Game fowls, states that he has not found olive legs to result from the cross between yellow and blue-legged birds. He gives as an instance a brood of eleven chickens bred from this cross, only two of which had willow or olive legs, and even these two he attributes to some anterior cross in the parent birds. This is a result at variance with my experience and that of many other breeders, who have stated to me that they concur in my opinion on this subject.

Some of your correspondents occasionally furnish accounts of the various crosses they have tried, and perhaps some of them who have bred between the Cochins and Spanish or Hamburgs would state in what proportion the chickens have had olive legs. In this experiment we should have a pure yellow-legged fowl on one side, and a pure blue-legged fowl on the other, and there is little probability of any previous cross affecting the results.

There is a remark at the conclusion of "NEWMARKET'S" communication, from which it appears that he considers my opinion about olive legs is founded on the fact that a combination of blue and yellow will produce green. I trust I am incapable of anything so absurd. The opinion I have expressed may be right or wrong, but it certainly has no other foundation than what I have observed in breeding Game fowls, and it was only by observation that I was led to the conclusion that white, yellow, blue, and, in some varieties of Game fowls, black legs were the primitive colours; and I certainly think the three former colours are more pleasing to the eye than olive, but this is a matter of taste. I readily admit that the olive-legged birds have many points in their favour; they are generally strong, well-formed, and well-boned birds; in some varieties, as the Black Reds, they are well marked in feather, and breed with remarkable uniformity both in feather and colour of the legs.

So far from having any prejudice against them, I believe it has fallen to my lot, when acting as a Poultry Judge, to award more prizes to the olive-legged birds than to any other. "NEWMARKET" thinks white legs give an appearance of softness. I cannot say this ever struck me, and at any rate it is only an appearance. As an admirer of Game fowls I have a rather extensive acquaintance with the old breeders, many of whom have bred them, and I regret to say still breed them, for less legitimate purposes than fancy or exhibition, but I never met with one who considered the white-legged birds inferior in strength or courage to those with yellow or dark legs.

"NEWMARKET" asks what I mean by a primitive variety of fowls. The term, I am aware, is not scientifically accurate, as in strictness it expresses more than is justified by the little we know of the origin of our domestic poultry. Under this term I merely intended to include varieties possessing colours and peculiarities of form which we cannot show to be the result of a cross, which are of a permanent character, and capable of transmission in breeding. "NEWMARKET" says there can have been but one primitive variety; but this I think is an assertion contrary to all probability, and altogether unsupported by proof. Able naturalists have discussed the question, and have failed to supply any solid data for forming an opinion on the subject. The diversities and contrasts in form, colour, and habits exhibited in the different varieties of our poultry are strong presumptions against a single origin. But there is some plausibility in the attempt to trace a few varieties of our domestic poultry to certain wild fowls known to naturalists, and still found in a state of nature, and no doubt there are points of resemblance between Bengal Jungle fowl and our Black Red Game, between the Sonnerat fowl and the Duckwings, the Bankiva fowl and some of our Bantams, and a very close resemblance between the Kulm fowl, or *Gallus giganteus*, and the Malays; but, with the exception of the Kulm fowl and Malay, the only close approximation to our domestic poultry has been effected by crossing and recrossing with the latter, until the blood of the wild original has been reduced to an infinitesimal quantity. The fact that the wild fowl referred to will breed with our domestic poultry, and the produce of the cross be prolific, is certainly evidence of identity of species. Beyond this all is vague conjecture, and we must be content with the fact that we have a number of varieties of fowls possessing distinct and permanent characteristics in form and colour, and which are transmissible in breeding.

But to return to the subject of Game fowls. "NEWMARKET" does not agree with me that there are two distinct varieties of Black Reds, in one of which the hens are a dark partridge colour, and in the other a lightish cinnamon or wheat colour, with clear hackles, and without the partridge markings in the feathers of the back and wings. The latter, he says, have in his experience thrown Duns and Piles. I think he must have been unfortunate in the selection of his stock, as I know there are hens of this colour which will breed black-breasted cocks entirely free from any trace of a white or dun feather, and I have seen large broods of them in which the pullets were so exactly alike as to be quite undistinguishable. The cocks of this variety are remarkably clear, and somewhat lighter in colour than those bred from dark Partridge hens, and I know some successful breeders for exhibition who always cross with the wheat-coloured hens and cocks from the darker strain, for the purpose of obtaining a clear light hackle in the cocks. The pullets bred from this cross have rather a mixed appearance, being generally slightly partridge-feathered down the back, but a clear brown or cinnamon on the wings. There is the same distinction of colours among the Malays, where we have the Cinnamon and dark Partridge hen, both of which will breed black-breasted cocks. Many breeders I know share "NEWMARKET'S" opinion about the wheat-coloured hens, and it is only recently experience has satisfied me that they are properly classed with the Black-breasted Reds. Two or three years ago, when acting as a Poultry Judge, I remember feeling great difficulty about a pen of Game chickens shown as Black-breasted Reds. The pen consisted of a remarkably good black-breasted cockerel and two light and perfectly clear cinnamon pullets. In form and growth this was the best pen of chickens at the show, but my colleague and I thought they were not properly matched, and I have often since regretted that the pen was passed over.

If I cannot agree with "NEWMARKET" about the Black Reds, I am still more at issue with him on the breeding of Duckwings, or, as he calls them, Yellow Duckwings. I presume he refers to Duckwings with straw hackles, copper saddles, and black breast and tail. They may be bred, he says, from a Black-breasted Red cock and a Grey hen. In cross-breeding it generally happens that the pullets take colour from the stock to which the cock belongs, and the cockerels the reverse. It is, therefore, quite possible that cocks approaching the true Duckwing colours might be bred from a Grey hen, even when matched with a Black Red

cock; but I have always found that most of the pullets from this cross were brown, or at least brown on the wings, and many of the cocks had red saddles, and in some a few red feathers would appear in the hackle. I am still, therefore, of opinion that the Black-breasted Duckwings possess the characteristics of a primitive variety, and can only be bred with any degree of uniformity from birds possessing the true Duckwing colours. "NEWMARKET" is probably right in considering the Dark Greys and Silver Greys pure varieties; they breed very true, and I never knew them produced by a cross between other colours. As to the Piles, I have tried the cross suggested by "NEWMARKET," and as the chickens, at least some of them, were very nearly true Piles, I have little doubt they may be bred from the Black Red and White Game fowls. I can also confirm to some extent his opinion about the Birchen Yellows, as I have seen some very tolerable specimens which were bred from a cross between the Greys and Brown Reds. The Red Dun is certainly a cross between the Blue Dun and Brown Red; but I am not aware of any cross that will produce the Blue Dun, and I think it is entitled to be considered one of the primitive colours. The Black, as well as the White Game, are also primitive colours. Both these varieties will breed with perfect uniformity when the stock has been selected with proper care. There are many White Game fowls in this neighbourhood, and I have seen some hundreds of chickens from them without a single coloured feather. The several varieties of Brassy Wings have an appearance of a cross between the Black and the Black Reds or Duckwings, and I have known good specimens bred in this manner. Of the Cuckoos I know nothing beyond having seen them at our exhibitions; they have the regularity in the markings of the feathers which is one indication of a pure variety. I do not know of any cross which would produce them, and I believe many experienced breeders class them among the primitive colours.

I have drawn up two lists. The first contains the Game fowls which there are good grounds to consider as primitive varieties, and the second contains those varieties which there is strong reason to believe may be produced by crossing. The first list contains—

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|------------------------------------|---------------------------|
| 1. Black Red, with Partridge hens. | 5. Dark Greys. |
| 2. Black Red, with Cinnamon hens. | 6. Light or Silver Greys. |
| 3. Brown-breasted Reds. | 7. White. |
| 4. Black-breasted Duckwings. | 8. Black. |
| | 9. Blue Dun. |
| | 10. Cuckoos. |

The second list, containing those colours which may be produced by crossing, includes—

- | | |
|------------------|---------------------------|
| 1. Piles. | 4. Red Duns. |
| 2. Spangles. | 5. Streaky-breasted Reds. |
| 3. Brassy Wings. | 6. Birchen Yellows. |

I have not included the hen-feathered cocks in either list, as their claim to be considered a distinct variety is questionable. The hens from which they are bred have nothing to distinguish them from Game hens of other varieties, and the hen-feathered cock is possibly nothing more than an accidental freak of nature. But, like the Hen-feathered Hamburgh cocks, they have a few zealous advocates, and I once saw a brood of Game chickens bred from a hen-feathered cock in which there were three cockerels, and all of them were hen-feathered.—A NORTH COUNTRY AMATEUR.

P.S.—As I am not acquainted with "NEWMARKET'S" address perhaps I may be permitted to take this opportunity of informing him that I cannot just now make the exchange which he proposes. If I knew his address I could probably put him in the way of obtaining what he requires.

CURIOUS FACT IN NATURAL HISTORY.—Some pheasants' eggs were recently set close to the spot where a partridge had had her nest destroyed. She still kept about the spot, and when the pheasant poults appeared attacked them on every occasion. She had killed nine, and escaped with impunity twice. She was attacking them for the third time when the keeper shot her.—JOHN BAILY.

CLASS 6.—PIGEONS WITH LARGELY DEVELOPED TAILS.

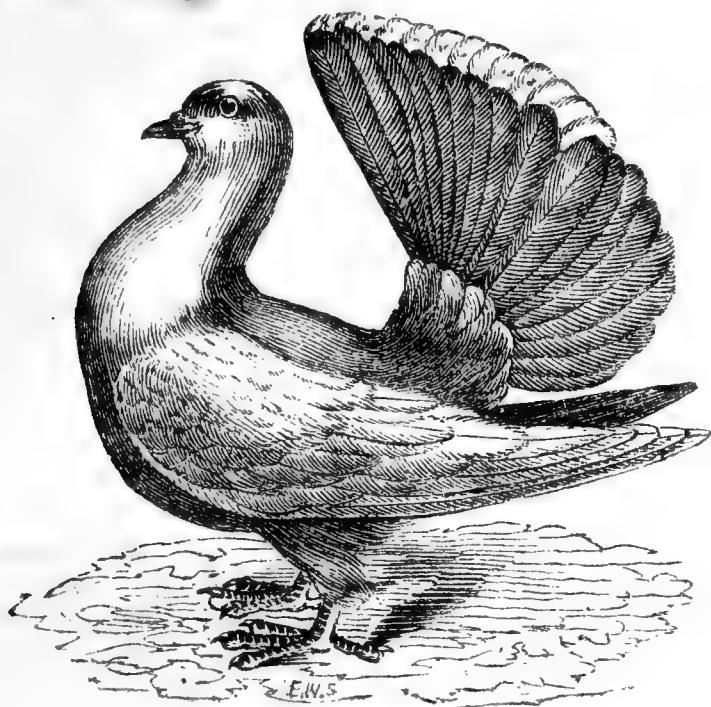
VARIETY 1.—THE FANTAIL (*Columba tremula laticauda*).

French.

German.

PIGEON TREMBLEUR PAON.

PFAUENSCHWÄNZIGE TAUBE.



THE Fantail or Broad-tailed Shaker is one of the most elegant of the varieties of fancy Pigeons. They derive their name from the size of their tails and the trembling or shaking of their necks.

Some naturalists assert that there is a kind of Pigeon found in the Philippines which erect their tails like a peacock, and they suppose the Fantail to be descended from them. Some German writers affirm that the cross between the Fantail and Barb are unproductive *inter se*, from which they argue that they must be distinct species, and not mere varieties. A friend, however, who has tried the cross in this country, informs me that his proved fertile *inter se*; but which is to be regarded as the rule and which the exception I am not able to determine.

The prevailing plumage is pure white, eyes dark hazel, feet unfeathered, the beak long and slender, and the head smooth. The fancy points may be noticed as follows:—First, the tail, which should be carried well up over the back, and evenly spread—the more feathers the better; but a bird that carried its tail well up would take precedence of one with a greater number of feathers whose carriage was not so good. Twenty-four may be considered a very fair number. The highest I remember having was thirty-one, and I have heard of their reaching thirty-nine and forty-two feathers in the tail, but such large tails are not often carried well; still such birds would be very valuable. Second, the neck must be long and slender, curved back, the head touching the tail, the neck trembling in a quick vibratory motion, the chest elevated and thrown well out. Third, the back short. Fourth, the pinions of the wings falling beneath the tail. Altogether the Fantail is the most striking of our domestic Pigeons, and one generally admired. The English and French birds seem identical, but the German "*Pfauen oder Hühnerschwanz*" must be regarded as a sub-variety. They are shorter in beak and neck, thicker made, and often have small turned crowns. Among them are frequently found various coloured birds, as black or blue; also party-coloured, as white with dark shoulders or black tails, and black with white tails. I have had several ash-coloured, and one red, but never saw any yellow.

The Fantail requires its nest box or hole to be sufficiently large to prevent the tails being rubbed, and they should be kept very clean. I have usually found them good breeders and attentive nurses; but well-bred birds require some care, as, owing to their large tails and peculiar carriage, they are not adapted to rough it among other poultry, nor to cater for themselves in the fields. Some of the older writers mention the Narrow-tailed Shaker; but such is not

worth breeding, as similar birds may be produced from a cross between the Broad-tailed Shaker and any other variety.—B. P. BRENT.

POLAND AND HAMBURGH FOWLS.

I AM very sorry I am obliged to cling to my incognito, but, as Mr. Williams says, I know the value of it. Besides, I am not sure my name would add much to the value of my communication. Let me, however, assure Mr. R. P. Williams I am not "C. E. C." If Mr. R. P. Williams is correct in his surmise as to the owner of those initials there are some points in which I should not mind changing with that gentleman. My knowledge of fowls is not of yesterday, but goes back some thirty years. I frequently saw them when the trade first began between this country and Holland, and often bought some of them. The Hamburgs were always invoiced as Hamburgs, and the Polands as *Polanders*. They are universally classed in this country as Hamburgs and Polands. Why disturb them? If Mr. Williams succeeded in persuading all interested that what they call Polands are Hamburgs, he would achieve just as great a feat as the good philosopher in "Gulliver's Travels" would have accomplished if he had attained the object of his desires, and that on which he had spent a lifetime, viz., to discover a preparation by which marble might be so softened as to supersede feathers for stuffing pillows.

But now for the comb question. I would have called the topknot a peruke, but they are so diverse in their styles. There is the Brutus; then there is the *perruque à la Russe* and the clerical, and the middle-aged and the juvenile, the straight and the curled, and then the disguise which has been so much in request lately. To which of these should I have likened it? Mr. Williams would not have understood me, nor do I his description of the cock's crest—"floating and globular." The crest of the hen should be globular, as nearly round as possible. Each feather grows out, and then curls in at the end—the whole should form a round and compact crest; but that of the cock is made of long feathers like those of the hackle and saddle, and all droop outwards, as unlike a globe as anything can be.

Mr. Williams asks, "What is a Polish cock? When did it arise? How begot? How nourished? Reply with the pedigree of a Polish cock."

I am completely dumbfounded. The triumphant tone of this string of questions baffles me; but it nevertheless just occurs to me that perhaps in seventy years time, long before which all must have admitted that the once-called Poland fowl is a Hamburg, some amateur may stumble on THE COTTAGE GARDENER for 1857, and, reading the letters of "PERRUQUIER" and "C. E. C.," assert that the Hamburg fowl should not have a comb or spikes. Then there will be a long discussion, and the comb champions will treat THE COTTAGE GARDENER as no authority at all, even as I do "The Complete Universal Display of Animated Nature."

Will Mr. Williams undertake to say he never bred chickens without combs and wattles? No, for he says he has killed such for the last twenty years. Every one who breeds extensively knows that such variations are common in all breeds. Five-clawed fowls throw chickens deficient in that point; feathered-legged parents, clean-legged chickens, and so on.

Polands without comb or gills do not invariably produce chickens precisely like themselves, nor do any other birds.

Many believe that these are the choicest of their tribe, and experience bears them out in their belief. In all animals the most perfect are the most difficult to obtain. If any one is content with inferior specimens, probably quite as useful, let it be so; but that is no reason for trying to persuade the world they are the most perfect. It will, I think, be long before Mr. Williams can overcome a decision arrived at and acquiesced in by all, or nearly all, the best breeders and exhibitors in England.

Mr. Williams will see I am one of the no-comb gentry, although a—PERRUQUIER.

ARE FOWLS PROFITABLE?

WITHOUT doubt many readers of THE POULTRY CHRONICLE will be amazed at the sight of this question, but I ask more for information's sake than any other. I have kept fowls for some time, and have kept in that time many sorts, and I have now got from Barn-doors, with which I commenced, to Hamburgs, which fowls, by the by, I find lay more eggs than any of the others, but still I cannot find any real profit belonging to them. Now, what I want some one to inform me through your columns is, the way to keep fowls with a profit. I feed mine chiefly on barley, for which I give say 5s. a bushel (by this you will perceive I have not the advantage of a farmyard for them to run in), and they eat about half a bushel a fortnight, besides pollard and potatoes. They have the run of about two or three acres of grass, a good yard, and place to roost in, but still I do not find any profit as yet. I do not know what I may do when I come to show; but, however, that remains to be proved. As you will perceive, what I want to know is, leaving showing out of the question, the way to keep fowls where there is not a farmyard, say nothing about getting a profit, without losing by them. I do not wish any one to think I say it cannot be done; I only want to know the way to do it. I do not write this to teach, but to be taught. But even if it is proved to me I cannot keep them without losing by them, I should still keep them on, if only for amusement, as I do not keep them with a view to profit; but still I thought, if I could keep them without losing by them, I might as well learn the way.—A POULTRY FANCIER.

[That poultry-keeping is profitable is beyond any doubt, as many in the poultry counties, Surrey, Sussex, and parts of Kent, make considerable sums yearly by it; but it must also be understood that they make it a business and chief consideration. Few persons can make money by a hobby or an amusement. Photography, for instance, affords a good income to many professors, while the amateurs are the cost out of pocket. The first grasps every occasion that presents itself for making money by it; the other follows it only as a recreation.

It is impossible for a person living in a town, where he has everything to buy, to make poultry profitable by attempting to rear fowls for market; but as a good amateur can always manage to have eggs in the winter, and towns are the places where these sell best, and as for about two months they will make from threepence to fourpence each, it will not be difficult to make them pay for their food. Many carry over a balance of profit; but then you must be honest, and you must debit yourself with those you eat.

Exhibitions afford a certain profit to any one who understands the breed of his birds, and who manages them well. There is always a sale for good pens, even if they get no prize, and the sum they make will pay for much food. If you will try meal instead of whole corn you will reduce your expenses one-third. Although you cannot attempt to rear fowls for market, yet by breeding carefully you may always have good birds, and there is a sale for such to be depended upon at remunerative prices. We would say, then, fowls are profitable in many instances, but with good management should *always* pay all expenses attending them.]

VARIETIES AND CHARACTERISTICS OF THE GAME FOWL.

THE true and chief varieties of the Game fowl are, as I have reason to believe from long experience, as follow:—

1. Black-breasted Reds, legs yellow or willow.
2. Brown-breasted Reds, legs dark olive or bronze.
3. Silver Duckwing Greys, legs willow.
4. Dark Greys, legs dark olive or bronze.
5. Duns (or Blues), legs a palish yellow.
6. Blacks, legs very dark bronze colour.
7. Whites, legs a very pale yellow.

Beaks ought to match the legs; upper mandible always darker than the under one. The nails of the claws as near the upper beak as possible. The Red Duns can be produced from a Black-breasted Red cock and a Dun hen.

All the Yellow, Birchen, and straw-coloured varieties can

be produced from the Red cocks of both sorts (1 and 2) and the Grey hens of both sorts (3 and 4). "Duckwing Bantams," which bid fair at present to realise a great price, can be reared by putting a *small late-bred* Duckwing Game stag (not cock) with even a Black-breasted Red Bantam hen, if hens of Duckwing-coloured Bantams are not procurable: they are rather rare, as is known. I have bred them this way for the sake of experiment, but never obtained more than *half* a brood of the right colour, the others taking after the Black-breasted Reds. The *first three* varieties I have enumerated should have a *yellow ball* to the foot.—NEWMARKET.

CURE FOR GAPES.—Perhaps you would like to know of a cure for gapes in chickens. It is having tobacco smoke puffed down their throats. In bad cases it should be done two or three times a day. I have tried it both last year and this with great success.—AN IRISHWOMAN.

OUR LETTER BOX.

FRENCH RABBITS.—In answer to the note inclosed to me, the Angola or French Rabbit is subject to having its hair knotted, and if this is required to be removed, and if the owner cannot wait till it casts its coat, the only remedy is cutting it off; that is to say, if the coat be too much knotted to be combed out. A King Charles or Skye terrier dog often may be seen with its hair thus knotted. I never had one so much knotted that it could not be combed out, though I have seen them so. I knew a man that had one knotted at the sides so much that it gave quite the appearance of wings.—PERCY BOULTON.

BLACK GAME CHICKENS WITH WHITE FEATHERS (*Mary McDuff*).—You need not be disheartened about your chickens. The Whites have thrown back to some Pile blood there is in them. A White flight is common in Black fowls—in Spanish, for instance; but it always disappears when they get full-feathered. All Black fowls, more particularly the cocks, are liable to throw a few red feathers in the hackle and saddle. It is by no means desirable, but it does not indicate impurity of breed.

PHILOPERISTERON AND NATIONAL COLUMBARIAN CLUBS.—The Secretaries of both these Societies having written amicably and fully in our columns, we think their respective claims may now be left to the decision of experience, and we quite agree with this paragraph in a note just received from Mr. Twose. "I do not think it will do either Society any good by trying to prove which is the best. It might create an unfriendly feeling between them, which I think is far from being the wish of any of the members."

THE "SIR HARRY" STRAWBERRY.—Some splendid specimens of this famous Strawberry have been this week exhibited in the shop of Mr. C. G. De Fraine, in Silver Street, Aylesbury. Those accustomed to the small Strawberries exhibited a few years since must indeed be surprised when they see such fruit as that grown by Mr. De Fraine. We have been told that the "Sir Harry" could not be properly cultivated in this neighbourhood; but all doubt on the subject is now removed. For size and flavour, in our opinion, no Strawberry equals this.—*Bucks Chronicle*.

LONDON MARKETS.—JUNE 29TH.

COVENT GARDEN.

A good supply and marked improvement in the trade. The usual consignments from the Continent and west of England reach us in excellent condition.

POULTRY.

There has been a good supply of poultry during the past week, but there has also been a great demand, which keeps up the prices.

Large fowls.. 7s. 6d. to 8s. 0d. each.	Guinea Fowls 0s. 0d. to 0s. 0d. each.
Smaller do..... 4s. 0d. to 6s. "	Pigeons..... 8d. to 9d. "
Chickens .. 2s. 9d. to 4s. 0d. "	Rabbits.... 1s. 5d. to 1s. 6d. "
Goslings..... 6s. to 6s. 6d. "	Wild ditto 6d. to 10d. "
Ducklings.. 3s. 6d. to 4s. 3d. "	Leverets.... 3s. 0d. to 5s. 0d. "

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—June 30, 1857.

WEEKLY CALENDAR.

D M	D W	JULY 7—13, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
7	Tu	Trailing Rosebay (Azalea).	29.769—29.342	62—44	S.W.	25	54 a. 3	15 a. 8	rises.	☺	4 33	188
8	W	Bell-flowers (Campanula).	29.682—29.308	48—39	N.W.	48	55	15	9 a 41	17	4 43	189
9	Th	Rampion (Phyteuma).	29.851—29.745	64—37	N.W.	01	56	14	9 59	18	4 52	190
10	F	Cardinal Flower (Lobelia).	29.926—29.910	74—50	N.W.	—	57	13	10 15	19	5 0	191
11	S	Mullein (Verbascum).	29.906—29.848	73—56	S.W.	02	58	13	10 28	20	5 9	192
12	SUN	5 SUNDAY AFTER TRINITY.	29.874—29.790	70—42	S.W.	01	59	12	10 40	21	5 16	193
13	M	Thorn-apple (Datura).	29.898—29.871	73—52	S.W.	—	IV	11	10 52	22	5 24	194

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 74.7°, and 51.6°, respectively. The greatest heat, 95°, occurred on the 6th, in 1852; and the lowest cold, 38°, on the 10th, in 1851. During the period 113 days were fine, and on 83 rain fell.

PARK PLACE, FRODSHAM, CHESHIRE.

THE SEAT OF JOSEPH STUBBS, ESQ.

DURING the time I was taking the report of the Manchester Floral Exhibition I met with the above-named gentleman, and he very kindly invited me to go down with him to his house, and see the improvements he was effecting in his garden and pleasure grounds. It always affords me and my fellow coadjutors in THE COTTAGE GARDENER great pleasure to observe improvements in any gardens, and to take note of such improvements.

I have already given a small report of the gardens at Park Place, but there are now a few further points that I think worthy of being known.

Mr. Stubbs is quite an amateur in Rose growing. His gardens are situated at the foot of some lofty hills, and the soil is rather good naturally, but has been greatly improved by trenching and additions of good loam and manure. The kitchen garden is sunk at least three feet, and the borders surrounding that portion of the ground are planted with Roses chiefly on their own roots. To prevent the soil from being washed down into the walk at the foot of the border they are covered with unhewn rock-stones, projecting from four to six inches out of the soil. At regular intervals spaces are left, in which the Roses are planted. There are three rows of these dwarf Roses. Now, the stones keep the soil moist, or at least prevent it from drying, and the consequence is, they thrive exceedingly well. I never saw Roses, even in the most favoured part of that Rose-growing county, Hertfordshire, so healthy on their own roots as on these stone-covered banks. Whoever has a naked bank, and wishes to clothe it with interesting and beautiful flowers, cannot do better than imitate those that I saw at Park Place. A north bank was covered with stones in a similar manner, and was planted in the interstices with that beautiful shrub, the *Cotoneaster microphylla*; and most beautifully the plants are thriving. At one end, where steps lead the visitor down to the kitchen garden, Violets are planted on the bank, and more healthy plants no one need wish to see. The beds in the pleasure ground in front of the mansion are judiciously planted with the choicest flowering shrubs. Rhododendrons were thriving and flowering in great perfection. I was much pleased with a large bed of the Chinese Pæonies on the lawn. They were full of buds, and must, when in flower, have a fine appearance. Long as these plants have been introduced to our gardens, they are not half so much cultivated as they deserve. Their flowers are large and showy, and most of them are as fragrant as a Rose. Their foliage, too, is very handsome, and their culture is as easy as a Cabbage. All that they require is a deep, well-manured soil, and a good mulching of dung annually. So managed, they will last many years without any care excepting that of keeping them clear of weeds.

Another class of plants, the Ghent Azaleas, are successfully cultivated here on the lawn. A large bed of them

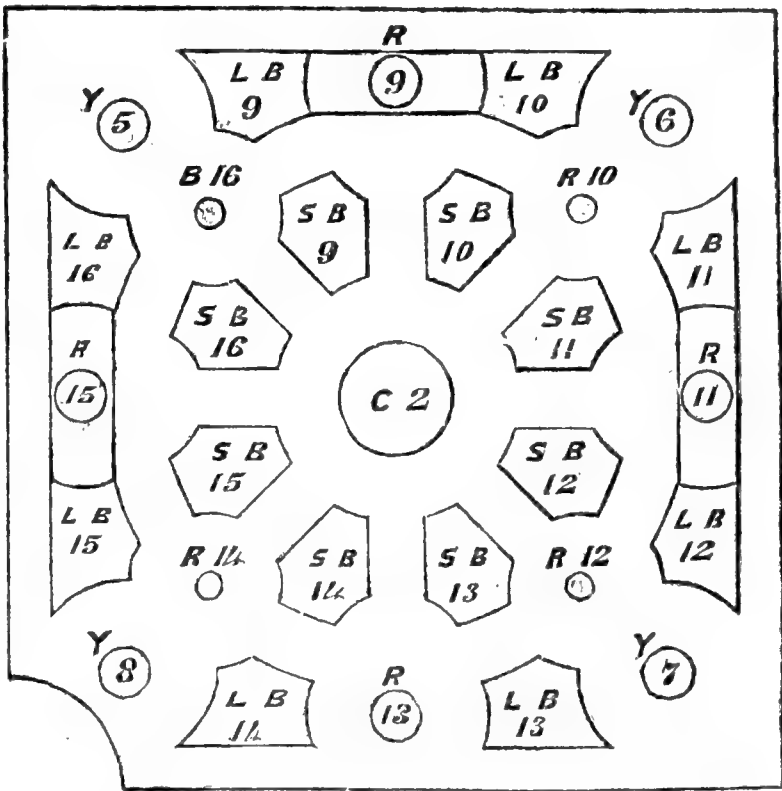
by themselves was in full flower, and was very showy. These are grown in heath mould, with a thin covering of fresh mould, enriched with decayed leaves annually.

The *Weigela rosea* is cultivated here in considerable numbers, and they were covered with their beautiful, rosy, Apple-like blossoms. I observed numbers of them planted under trees, where they thrive as well as any shrub I ever noticed. The new shrub *Berberis Darwinii* proves perfectly hardy in Cheshire. I saw several fine plants that had just gone out of bloom, and Mr. Cunnah, the gardener, assured me the blooms have been perfect and beautiful. This is a fact worth recording, as many cultivators doubt its being quite hardy.

In a mixed flower border I observed several plants of the true *Lilium Japonicum* flourishing well, and showing their noble pendulous blossoms. In the same border I noticed the *Lilium superbum*, a Lily that is by no means common.

Straggling flowering shrubs, such as *Jasminum nudiflorum*, *Pyrus Japonica*, *Forsythia viridissima*, various kinds of Honeysuckles, and some Spiræas are here rendered sightly objects by being tied to strong pillars. These pillar shrubs are planted amongst the other shrubs, and by their height and peculiar appearance break the level line of the shrubbery with the best effect.

At the garden end of the house there is a rather large flower garden laid out on grass in a geometrical style. In it there are some beds planted with somewhat unusual plants. I especially noticed a large bed of the lovely, sweet-smelling trailing shrub, the *Daphne cneorum*. It was in full flower, and was gay with its red-pink blossoms. The soil is a compost, in which heath mould, decayed leaves, and sand form the principal portion.



This flower garden forms a square, and is divided into

four compartments, separated from each other by a spacious walk crossing at right angles. The accompanying ground plan is one of these compartments. As both Mr. Stubbs and his gardener are readers of *THE COTTAGE GARDENER* I could perceive they have profited by the information contained therein about furnishing such a garden with flowers. The beds are all numbered, as the plan shows. L. B. means large bed; S. B. small bed. These beds are now reduced in number by joining the outside ones together. Beds 13 and 14 are not joined in the plan, to show how they were originally. These beds so joined are planted with choice low-growing shrubs, mixed with the best herbaceous flowers and standard Roses. Y. means Yew. There is at each corner a plant of the upright or Irish Yew. I noted the following plants on the beds. They were just planted when I was there. Centre bed *Calceolaria King Alfred*, edged with *Sedum cæruleum*. No. 9. Red China Rose, edged with the Fairy Rose. No. 10. A dark variety of *Phlox Drummondii*. No. 11. Roses again. No. 12. *Calceolaria Gold Cap*. No. 12. *Petunia Jenny*, a good dark. No. 13. Tea Roses. No. 14. *Geranium Flower of the Day*. No. 15. Verbenas, scarlet. No. 16. *Lobelia*, dwarf. The large bed at the south end was of standard Roses in two rows, the front one much lower than the other. The large bed at the north end was planted with low Roses, so that the garden and its beds could be viewed over them. These beds are edged with *Sedum globiferum* planted close together. Many kinds of unusual edgings are used in these gardens. For instance, the bed of *Daphne cneorum*, mentioned above, is edged with *Gentiana pneumonanthe*.

The whole of the beds are placed upon a lawn, that is, they are cut out on the turf. Let the reader imagine four such squares, with walks between them, a border next the walls that bound the garden, and he will form a tolerable idea of the entire flower garden.

Standard Roses I never saw more healthy, and the reason is obvious enough. Every morning they are carefully examined, and all Rose grubs crushed. If any green fly appears the bushes are instantly syringed with tobacco water. If red spider shows its ravages the trees are severely syringed morning and evening until the home is made too wet for them; and, lastly, in dry weather they are copiously watered. This close attention is rewarded by the owner having beautiful healthy trees and an abundance of the finest blooms.

The lawn in front, where the large beds of choice shrubs are placed, is kept closely shaven by a large mowing machine drawn by a stout pony—a most economical method, saving fully the labour of three men, besides being mown so much more quickly. If it was mown by the old method with the scythe the lawn would very seldom be entire in beauty. Some parts would be just cut, and others fully grown again, whereas the machine and the pony mow the whole in two days. Hence, a day or two afterwards, the lawn presents a uniform, even, and equally green appearance.

The entire extent of the area of the house, the lawn, flower garden, and kitchen garden is six acres, and the whole is kept in first-class order by Mr. Cunah, the gardener, and three assistants. It is but justice to them to state that the gardens are as well kept as any I ever visited.

Mr. Stubbs is more delighted with out-door than indoor gardening; hence he has no stove or greenhouse. Two or three years ago he had built two small vineries. The Vine border was formed flat, and the stems had to be trained in the open air against the front wall rather more than two feet. Whether it was that the border was wet, or the cold affected the exposed stems, the Vines did not thrive. I advised the raising the border up to the front window-sill and replanting the Vines. This was done last winter, and the Vines are now pushing strongly,

and there is every prospect of their doing well. Inside there are pits, shelves, &c., and on them I saw some healthy Camellias and Indian Azaleas, two tribes of plants that thrive as well or better with the Vine than any other.

A short distance beyond the wire fence of the gardens there is a kind of hollow near a grove of large trees. The accumulated deposits of vegetable matter and sand have partially raised this hollow. This soil exactly suits the hardy Rhododendrons and American plants generally. Mr. Stubbs has determined to have this spot connected with the gardens and formed into a hardy fernery. He possesses a fine collection of these interesting plants, and they are becoming too large for the border near the house, where they are growing at present. The hollow has been drained, walks set out, and beds designed for the Americans, and a rockery projected for the Ferns. This will be, when completed, a very interesting spot both to the owner and his visitors, especially such as love Ferns.

This is a brief account of what I saw at this interesting place. Four years ago, when the present owner came into possession, it was a perfect wilderness. In another four years I conscientiously believe it will be almost a paradise. I trust the kind-hearted and garden-loving gentleman will be spared many years to enjoy it.

T. APPLEBY.

BEWARE OF "OUT OF SIGHT, OUT OF MIND."—LADIES' NOSEGAYS.

"Out of sight, out of mind" is a rule of life with one part of the people of this rich country; but with another part of them it is just the contrary, and what they cannot see they are always thinking about. Now, there are two things in gardening which I generally treat in two opposite ways, after the same fashion. When I give an order to do such or such a thing I discard that thing from my memory as completely as "out of sight, out of mind," and if I find any one of my orders has been neglected at the proper time I blame myself, and make up for it in the second thing, which is this—whenever any one of my flower-beds is out of sight, or the plants to fill it with, or those by which it was filled a little while back, I am much more anxious about it or them than when they are full before my face. Though out of sight they are never out of mind, and never do I experience the rule to be more important than about this season of the year. Where are the spring flowers now? Some of them are where we have been admiring them all along; some are safe enough, and very well cared for in some place out of sight, but not out of mind; and some are going to destruction as fast as their roots can carry them, because they are removed out of sight to make room for bedders, and out of mind because everything and everybody which is out of sight is sure to be out of mind, and always will be with some owners; but the truth is, the best of us are liable to forget very important things at times, and at this time more particularly, when so many plants are removed to the reserve ground. Does any one attend to, or look after, *your* recently removed Tulips, Hyacinths, and other spring flowers, or do you let them chance it, or what? I should not wonder if all of them are parching and perishing at this very moment, while you and all your force are watering other plants now in the beds which would be ten times better with one-half the quantity. I have little faith in the good which so much watering of beds is thought to do; but I am persuaded that every plant which has been recently taken up ought to be as regularly watered as a pot plant until it is either ripe, and dies down like a Tulip, or is established as securely as if it had been growing there ever since the flood. Well, he who is behind

with all this planting and watering, the shows and the haymaking will be sure to get into a pickle by and by.

Are the early Pompones and the young Chrysanthemums going on well, or have you been obliged to divide the old roots only? Ten to one if they are not in the background, and out of sight, &c. But this is the last chance, and a capital chance it is to make lots of cuttings of all kinds of Pompones, early as well as late kinds. Put "three and three" of them in thumb pots; put the pots *in the front* of a close pit (all pits are hot enough now), and in three weeks you may plant them out on a south border, fourteen or fifteen inches apart, without disturbing the balls. About the middle of July stop them to four or five buds from the bottom, and if the bottom eyes are picked out of the cuttings, as they always ought to be with the last batch, each of the three plants in each ball will put up at least three strong shoots, and those that come very weak should be rubbed off altogether. You will thus have from eight to a dozen flowering shoots from every ball, and nicer plants were never seen in Temple Gardens in London; but recollect there is not a day to be lost.

Give me an order for 10,000 Moss Roses, Cabbage Roses, or yellow Roses, whether they be Austrian, English, Irish, or Scotch, or from the Southern States like Isabella Grey—the dear Isabella Grey from the States—and you shall have them all on their own roots, and all from cuttings made from the young wood that would be wasted by the budders in June and July. Eight years ago come next September one of the best Rose growers east of London made that same proposition to the writer, which brought on a conversation about striking Roses, when he affirmed that every Rose in this country, or in any other country, could be grown from cuttings with as much certainty as bedding plants at two seasons of the year—the very hard and difficult ones to be forced in January, and made cuttings of in February from the very young tops, and the great bulk of Roses at the turn of Midsummer. He also told me that he and all the great Rose growers make a point of having a smart hotbed on purpose to save every morsel of wood from new Roses at the time of general budding, or else a good deal of it would be necessarily wasted.

There are more than a thousand Roses on their own roots in the Experimental Garden; and last Saturday I would have measured one enormous Rose of *Baronne Prevost* on a two-year old plant, only that I was almost sure that half my readers would not believe the size, although I always tell the truth, and nothing but the truth, as far as I know. The great madness and huge folly of growing dwarf Roses otherwise than on their own roots will take wing out of the Experimental, and fly off to the uttermost parts of the earth, and will never more be heard of but as a matter of history—the history of fondling folly during the first half of the nineteenth century. Every Rose in the three kingdoms will now and for the next month come from layers just as easily and as soon, and some much sooner, than Carnations and Clove layers, and they will be fit to bed out "by themselves" towards the middle of October, and, with a few sheets of "oil-skin" or pieces of bladder, "layers" may be taken from all the standard Roses; and of all the substances ever yet dreamed of for rooting layers in the air, the dust from the cocoa-nut fibre is the best and surest, as it possesses the quality of retaining moisture longer than any other substance known in the garden.

From Roses to nosegays is but one step; but to enjoy the comfort of a *living nosegay* in a cool drawing-room on a broiling hot day is a luxury known only to a very few of the drawing-room folks. But, first of all, what is a living nosegay? A well-balanced flower-bed. There never was a flower-bed yet which did not represent a nosegay; and I could tell a dairymaid's nosegay out of fifty beds in a flower-garden, also the coachman's

button-hole and bridle nosegays, the dandy's nosegay, and the nosegays of the dunce, the screw, the stripling, and the man of taste; but, coming up that length, see my lady's nosegay—a perfect representation of a perfect flower-bed, and a perfect flower-bed represents the new kind of summer nosegay which I am going to tell about—the live nosegay. The first of them I ever saw was about this time last year. It was made by a French lady who visits the Experimental Garden and the late Queen of the French at Claremont. Like most of our great English ladies and the higher order of minds in France, she has a wonderfully good eye for colours and for artistic designs; and, moreover, many of my readers are "beholden" to her, unbeknown to them, in the matter of flowers. When I saw the first of her living nosegays, composed of the blue *Nemophila*, I was so taken with it that, were I the young Norval of a Scottish dukedom, I should have proposed to her on the spot. The flowers of *Nemophila* come on curled-up spikes, *circinate* or *scorpioid*, like those of Forget-me-not, Eutoca, Borage, and the like, and all these kinds of flowers make the best living nosegays. You cut off the *tops* of the flowering shoots above the last expanded flower; the rest are in bud and curled up. Throw these tops into water, and they will continue to uncurl for a week or ten days as if they were still growing on the plant, the buds will open a few each day, turn up to the light, which causes the cut ends to turn down into the water or "right themselves," and the whole surface of the water is alive with flowers jamming each other so closely that you would think they were made into a nosegay on purpose; and of all the modes of showing off cut flowers in the drawing-room this is by far the most beautiful. Suppose a half-pay officer in Bath to pick a handful of Forget-me-nots, cut off the tops, throw them into a cup of water, the next day they are in full bloom. He sends it to a dowager next door; and can she mistake his meaning? Not she, indeed. D. BEATON.

OUR HARDY FRUITS AT MIDSUMMER.

THE end of June is, in my opinion, the most important period in the whole summer as to the attention requisite with most of our out-door fruits, especially trained trees. By that period most of the young spray is fairly developed, and, indeed, in many cases, too much so. The embryo blossom-buds, or those disposed to become so, are in danger of being retarded in a most improper degree through the umbrageous matter by which they are in many cases crowded. It is absurd to imagine that tender fruits may remain in this smothered condition until the prime of summer has gone by without detriment to the blossom-buds. If such were the case all our advice about the importance of light in the organisation and perfecting of the future blossoms, would be in vain; but it is not so. Depend on it that unobstructed light is as important to the foliage which emanates from spurs or buds convertible into blossom, as it is on the ordinary foliage of the tree or plant of such things as bear fruit rich in saccharine and other matters. Besides, on the score of decency alone, how pitiful it looks, after perambulating highly-kept ornamental grounds, to step into the kitchen garden, and find at Midsummer the fruit trees all confusion, as though fruits were not worth consideration either as to quantity or quality; and perhaps, in addition, to hear the proprietor or cultivator lamenting the bad setting or worthless character of fruits considered respectable in other quarters. I must confess to as great a love of flowers as most persons; but, on behalf of the fruits, I really envy them the proud position they occupy at the present day. The proper cultivation of fruits is certainly more tedious, and perhaps more uncertain than that of flowers,

and they do not make so much noise in the world; but when winter arrives, and the ephemeral summer beauties of the floral world have passed away, how comfortable and respectable it is to have our fruit-room shelves covered with choice Pears and Apples, which we are assured will carry us on, in defiance of frosts and snow, until the succeeding May; and then, again, to see glorious Muscat Grapes, or the Hamburg, Barbarossa, or West's St. Peter's in company with a good Black Jamaica Pine Apple. Is not this a tempting sight—one even more conducive to the social comforts of a family than even gay flowers, with all their holiday charms?

There are five different processes which, all or in part, are requisite for our trained fruits in general. They are as follows:—Pruning back, pinching or stopping, thinning, sucker removal, and cleaning from insects. But let us take a glance at some of our principal fruits, and first the Peach. Everybody now, of course, attends to what is termed disbudding, which has been so often described by me in *THE COTTAGE GARDENER*. I would here remind our friends that when Peaches and Nectarines are properly managed and in good health there is no occasion to leave any surplus shoots; or, if any, the best plan is to spur them back, that is to say, cut or pinch them to within two or three leaves of their base. These will probably produce what may be termed spur blossom-buds. Such will sprout afresh in three weeks, when they must again be pinched, and so on to the end of the season. Pears which are producing too many breast shoots must be handled rather closely too. There is no occasion to be so fussy about the danger of removing a portion of this breast wood, for fear of the true spurs being excited into growth: there is not much danger of this at the end of June. I think it the best practice to remove coarse and superfluous shoots at twice, and those who are troubled with such spray may now venture to remove one-half, cutting them back to within three leaves of their base. The remainder may have their points pinched—at least, such as are to be removed at a second dressing—and in the beginning of August they may be removed altogether. Where Pears are not too strong, and there is little excess of spray, it will suffice to pinch off the points of the waste shoots, and to suffer them to remain on until the end of August. Plums under a course of training are apt to produce very coarse spray. Even trees otherwise weakly at the extremities occasionally produce very coarse shoots at the lower portions of the trees. If there be any naked space of wall, fence, or trellis to cover, such should be pinched when about six inches in length; if not, they are best entirely removed. There is no occasion for pinching back the small breast wood of trained Plums, inasmuch as they ripen their wood freely, and the fruit is apt to crack if too naked as to foliage. Apricots require very similar management to Plums, excepting that it is requisite to admit more sunlight to the blossom-spurs, and, indeed, to the fruit. It is necessary, however, to exercise a peculiar jealousy with regard to the Apricot, as it is so very liable to premature decay in portions of the tree. Any portion which looks leaner than the rest may fairly be suspected, and extra shoots may at once be trained in to provide against a failure. Those portions which are destined to this awkward end may generally be known, a summer previous to their decay, by their ceasing to make new growth of any consequence. There is much complaint this season of this odd occurrence, for which no person up to the present moment has fairly accounted. There can be little doubt, however, that the stocks used for the Apricot are not all that can be desired, and this stock question is one which must some day assume a much greater degree of importance than has hitherto been accorded to it.

Apples under training, perhaps, give less trouble than most fruits. Being generally grown on the Paradise

stock they do not produce that superfluity of wood which those grown on the free or Crab stock do; a little handling, therefore, will suffice. As few young Apples bear on the young spray there is no reason for encouraging a host of twigs that must give way beneath the pruner's knife at the ensuing winter. Those pruned back should have about three eyes or buds left at the base of the shoot, for these will frequently give rise to real fruit-spurs. Cherries need little summer pruning; yet they require a Midsummer examination, and, like the Apples, in all cases three or more eyes should be left at the base of each shoot removed. The Morello kinds are apt to produce most shoots, and these, too, may have a spur base left, as Morellos bear very fine fruit occasionally on such spurs.

And now, after this brief review of a few summer duties, let me point to the propriety of destroying all suckers from fruit trees of whatever kind, from the aristocratic-looking Peach down to the plebeian Gooseberry. This is peculiarly a summer duty; for of what use is it to suffer annually trees to produce suckers, to the detriment of the fruit and the true wood, only to be removed at each ensuing winter? In eradicating these pests care should be taken to pare them away as clean as may be; for be it remembered that each sucker topped only without eradication is merely productive of a host of rubbish. I have seen trees with suckers thus treated with a dozen or so of old sucker crowns like a Willow plantation. Most fruits are liable to these pests, and their prevalence generally argues bad management in the earlier stages of the tree's history; but of this more on another occasion. Let then, I say, every sucker be removed by Midsummer, or speedily afterwards.

Last, but by no means least, comes the insect affair. "No quarter" must be the word. The Apples will exhibit American blight or cobweb caterpillars, or flies, perhaps, innumerable; the Peaches will possibly hoist signals of distress in the red spider line, or still the aphides may haunt them; the Cherries may groan under the pressure of the dolphin fly; the Apricots may have their flags furled and their poor foliage gathered in bundles through the insidious arts of the caterpillar of the red bar moth, as well as other enemies; the Pears, too, have their evils to contend with, albeit they are not so much a prey to those hosts of aphides which so much infest some other fruits. And what shall we say as to the gardener's troubles? Why, that he is just like the Alpine traveller of whom we have all read. He no sooner surmounts one peak or difficulty than others arise in the distant horizon. I well remember that when a little boy, and schooling on the banks of the Thames, I occasionally had a run up the river's side from Putney on the way to Kew. Now, this part of the river, as many know, describes a curve, and in those days, some fifty years since, there was a sort of Pollard Willow growing in a kind of line parallel with the banks. On rounding each curve or twist I could now and again fix my eye on one of these Willows which stood prominently, and formed as it were a point. Hope would constantly whisper in my mind that there must be something extraordinary beyond this Willow stump; but, alas! on reaching it there was another just such a stump ahead, and I have run thus in hopes of seeing the whole river for an hour at a stretch; but, alas! never saw the whole at once to this day. Such is life itself, and such is gardening, for it is time I got back to my lesson.

I have nothing particular now to offer in the way of destroying insects, &c.; nothing but such an extra amount of assiduity as is seldom seen. I still hold by the same curative articles, tobacco, sulphur, hand picking, and diligence. The chief thing is to be early in the field.

R. ERRINGTON.

LOOKING AROUND US IN JULY.

Air Giving can hardly now be done to excess in common greenhouses and conservatories except in the case of occasional storms, or where one part of the house is chiefly set apart for growing plants, or where rather tender specimens are brought from the stove, when such part should be kept closer and moister. In sunny weather, such as we have lately had, and especially when accompanied by wind, so that the pots dry nearly as soon as watered, it is a good plan, even with rather tender things, to have plenty of air at night, which will invigorate the plants, and do away with the necessity of largely increasing the quantity of air during the day; for, when air is given early or left on all night, the sun will heat the house very gradually, and the atmosphere during most of the day will be more moist than if a great quantity of air was admitted when the house became very hot. Even in forcing houses, were it not for the extra expense in cold weather, we would never shut up the houses entirely in the summer months. In the case of a greenhouse with abundance of air all night, and no great extra quantity rushing through the plants during the day, but moisture on the floors, and a little shading resorted to to counteract the extra heat, plants such as Geraniums will remain much longer in bloom and in better health than when exposed to great draughts of air during the day. To prevent these drying draughts it is often advisable to give air freely by the top sashes, and even by the doors, instead of by the front sashes; so much so that the air may pass over the plants instead of striking at once on stems and pots, and robbing the latter quickly of their moisture.

Watering.—Under ordinary circumstances and in hot weather it is scarcely possible to over water. Small pots may require it twice a day, but, in general, once will be sufficient, with the addition of syringing the floors and stages and the lower parts of the plants, when it would be inexpedient, owing to the bloom, to syringe overhead. The general rules for watering must, however, be still kept in view, and for three months to come it will be advisable to water in the afternoon, which will enable the roots quietly to absorb the moisture before the sun of the following day begins to evaporate it again. When watered in the morning the moisture is quickly sucked back again before the plants get the good of it.

Azaleas that bloomed early, and were kept close and moist until they made their wood, will now be setting their flower-buds, and should gradually be inured to more exposure until about the middle of the month, when they are placed in an open and yet somewhat shady situation out of doors. The roots in the pots will suffer more than the tops from full exposure. When exposed, therefore, some means should be resorted to for shading the pots from the sun's rays. Later plants may be continued in a somewhat close and moist atmosphere a little longer, and those just finishing their blooming would be better to be well cleaned, and then transferred for a month or six weeks to a moist, shady place, as under the shade of Vines in a late vinery. Be careful, however, that there are no thrips on the Azaleas, or you may regret the day they ever got inside of a forcing house. Even if there are no traces of them it will be a safe measure to syringe them well a time or two with size water, so strong that when held between the thumb and finger you can just perceive a little clamminess or stickiness: a little tobacco dissolved in the water will also be an advantage. Failing such conveniences, the plants would be better if kept in a part of the greenhouse by themselves, somewhat shaded and frequently syringed. If not done before, this month would be a good time for shifting into larger pots; but the shifts must not be so large as to prevent the roots filling the new soil

before autumn, or the next year may give you better foliage, and more of that than flowers.

Camellias.—Much the same may be said of these. Those intended to bloom in November should either now have their buds set, and be out of doors in a sheltered place, or fully exposed in the house in which they are grown. When a house is planted with Camellias, and intended to be early, we should be inclined to thinly size the glass of the roof, and leave abundance of air on night and day. If not so forward the plants would relish a moist atmosphere a little longer. If potting should be resolved upon, keep the remark above respecting Azaleas in view, and also remember that, while Azaleas thrive well in rich, fibry peat, the bulk of the compost for Camellias should be fibry, fresh loam.

Cytisus, *Genista*, and *Coronilla* will now be all out of doors, and, with the exception of fresh potting, the principal things they will require will be plenty of water at the roots and plenty of syringing overhead. Clear soot water and clear sulphur water may frequently be used for this purpose, and also soapsuds reduced if there has not been much soda or ashes mixed with the water. Where that is suspected it is better to make a little soap water. These and most of the Acacias are subject to red spider and scale in hot, dry weather, and the syringe is the grand remedy.

Calceolarias.—The fine herbaceous ones will now be nearly over: what are left of them cannot be kept too airy or too cool. Those seeding freely should have the smaller seed-pods removed. Those from which cuttings or plants are to be taken should be transferred to a north border, and either plunged or planted there, and the stem so covered with nice, rich, sandy compost, that as the young shoots grow they may put out plenty of roots, and be plants at once when detached. The same situation will suit the young plants for several months. Shrubby ones in pots will require abundance of water, and will be much benefited by rich top dressings. Cuttings of them may be inserted, if firm, short, stubby pieces are taken, in a shady place under hand-lights; but if the beginning of the month is passed over it will be more satisfactory every way to delay the operation until the commencement of October. A few seeds for early blooming in spring may be sown in the middle of the month. Unless for large specimens August is early enough.

Cinerarias.—Old plants of valuable kinds planted out or divided should be well attended to with watering, and plenty of good plant suckers will ere long be obtained. Seedlings to bloom in November should be pricked or potted off, and another batch sown for succession.

Chinese Primroses.—Those sown early should now be pricked off, two or three in a small pot, and ere long one in a pot. The best place for them is a board behind a wall or hedge with a north aspect. It is not too late to sow for spring blooming. Double Chinese Primulas should be divided and shifted, and cuttings made and potted. Cuttings inserted in a little bottom heat in April will want repotting now.

Pelargoniums.—The earliest of these, florist and fancy, will now be nearly over. Less water will be necessary, and, after standing in an airy, exposed place in the house for a few days, the plants should be moved to one more airy and open still out of doors, and all the care required will be to give them merely as much water as will prevent the leaves flagging and the stems shrivelling. Anything like storms of rain should also be avoided by turning the pots on their sides while the rain lasts. When the stems are well browned and hardened the plants may be pruned back, doing this freely in the case of the old Pelargoniums, but not so freely in the case of the more compact, less luxuriant fancies. All the old

Pelargoniums will strike freely in the open air in sandy soil during this and the succeeding month, and so will strong cuttings of the fancies; but small, rather green bits of the latter had better have the advantage of a handlight over them. Cuttings of scarlet Geraniums will strike freely in the open air. Let few leaves remain on a cutting, and do not be alarmed if they flag a little. Successions of Pelargoniums will want tying out, but staking as little as possible; and those intended for autumn blooming should now be potted in their flowering pots. Many of the scarlet and pink kinds that make little show out of doors make a fair show in the greenhouse in autumn.

Cuttings of double Groundsel, scarce Verbenas, and Dahlias may now be inserted under a handlight in shady places, and will furnish nice compact plants in autumn. The main stick of Verbenas should be taken off in August if the owner wishes his young stock to be free of fly and thrips.

The *grafting* of Oranges, Camellias, Azaleas, Geraniums, &c., may still be proceeded with, but it is now getting late for such operations. A close, moist top heat, with shade, and a little sweet bottom heat are great accessories to success.

Neapolitan Violets.—Plants divided, or cuttings planted out respectively on a border, will be greatly benefited by frequent waterings and surface-of-ground stirring, and removing everything in the shape of a runner. Without that attention you must not complain if you have a small supply of flowers in winter, whether grown in pots or in pits and frames.

Achimenes should be neatly supported, so that the sticks should not be perceptible, and successions grown on. A closish pit is the best for the latter purpose, and if they are intended for the greenhouse set them in a place where the fresh air does not rush directly upon them. In other words, when there, keep them and their neighbours, the Gloxinias, moist, and in a subdued atmosphere as respects light, and moist from standing on damp moss, and with a diminished supply of air.

Balsams and all such soft-wooded plants should receive frequent shiftings, rich soil, and plenty of water, with a free current of air to keep them bushy. They will do very well after May without bottom heat. *Cocks-combs* are always the better for a little bottom heat until they are full grown, or nearly so. Few things will beat a good Balsam, and we frequently see them first-rate in windows, and even planted out in flower gardens.

Heaths, *Epacris*, and other hard-wooded plants must be treated according to their circumstances. Those that are in bloom can scarcely have too much air or light either, provided there is no particular desire unduly to prolong the bloom, and care is taken that the roots are not injured by the sun beating against the pot. Those that bloomed early, were cut back, kept rather close, and thus encouraged to make wood, will now require more sun and air to consolidate and ripen the wood. Others, again, that have just finished flowering, should be cleaned of old flowers, pruned as needed, and encouraged to grow, and then have the wood hardened before winter. For growing after pruning and cleaning nothing is better than pits with plenty of light, which you can shade at pleasure, and the sides of which so far shade the sides of the pots. For hardening and ripening the wood no place is better than the said pits again, as, even when unable to bear the full sun in the middle of the day at first, the lights could be left off morning and evening, and even during the night, when the weather is to be depended on. In all such plants, as autumn approaches, the great thing is to ripen and harden the shoots, and thus set the flower-buds, and therefore all the sun they will bear, and all the water they can do without, will be so much in their favour.

R. FISH.

MOWING MACHINES *versus* THE SCYTHER.

NOTWITHSTANDING the great advance in mechanical skill during the last few years, there are some things which do not seem to have improved much during that time. Some old-fashioned ploughs have beaten modern ones, and the original reaping machines of Bell, described by Loudon about thirty years ago, beat the crack American and others out of the field in 1852 and since. In gardening matters, also, a like tendency exists in certain things to resist improvement; in others mechanical invention seems to have strayed too often from the straightforward path of utility into that of novelty, or even frivolity.

The mowing machines, of which there was a goodly display at Chiswick, were to be subjected, I believe, to a trial the day after the Show; but with the result of this trial I have nothing to do, as I write only on the broad principle of machine against scythe, and not as opposing one machine to another; for, after all the assumed improvements each respective maker says he has introduced, the cutting blades are identically the same as in the original machine of Budding, sent forth about 1831 or before. That the cutting parts, which are, of course, the most important parts of the machine, should remain so many years with so little alteration is certainly complimentary to the original inventor. It is true the number of such cutting blades has been reduced from six to four, or even three; but the spiral mode of fixing them on a roller is just the same now as then, as well as the box for short grass, &c. Now, I find no fault with this, and must admit that the other portions of the machine have been much improved, the front roller and wheels being very useful; and more recently the mode of applying the working parts so as to cut the grass to the extreme edge it travels on is a great acquisition, and other mechanical contrivances have been added, giving the power of regulating the heights to cut the grass, &c., which have, perhaps, improved the machine to as great an extent as it is capable of. Still I confess my doubts of its ever competing with the scythe for general purposes, though in some cases I have no doubt that it is found useful; but, as a sort of comparative table of its merits and disadvantages will convey the best knowledge of its utility, I herewith append a few notes drawn hastily together from my own experience and observation, assisted by the opinion of others who have likewise had experience that way, beginning first with the advantages a mowing machine presents over the scythe. A few points are also appended of the disadvantages its use entails, and other unprofitable results.

First, then, we have the merits of a mowing machine.

1. It will cut the grass when dry; in fact, it does so best in the middle of the day.
2. It requires no particular skill to direct it, and to a gentleman wanting athletic exercise it seems a useful and pleasing mode of taking it.
3. It clears up the grass as it proceeds, leaving no litter to sweep up afterwards.
4. It is well adapted for long walks which are too narrow for the scythe to be wielded effectually.

Its disadvantages are these:—

1. It will not cut the grass under the boughs of a shrub or tree, and cannot well be driven into acute angles and other intricate places between flower-beds.
2. It cannot be applied to a slope or steep hill, and when the ground is uneven it is also inapplicable.
3. It makes an unpleasant noise, more so than many pieces of machinery much larger, which is annoying at times when visitors are about, the machine only working well in the middle of the day.
4. It is very liable to go wrong, something or other

getting out of order, alike trying the patience and ingenuity of the manager.

5. It does not economise time when worked by hand alone, as two good mowers will cut more grass with the scythe than they could with the mowing machine in a given time, *i.e.*, letting each party choose his own time; but if a pony or donkey be used a mowing machine may then be a useful thing.

6. It will not cut long grass, neither will it cut it when it gets laid flat down. Some hard weeds and grass seed-stems are left at times as well.

More points might be added, but the above are sufficient to indicate the principal features of the machine. Of the scythe it is needless to speak, further than that it is still the most continually-used implement to cut the lawns in the most extensive places. Little if any machine work is done at the Crystal Palace, though I believe it is used at Kew; but the number of places in which the mowing machine has been abandoned speaks strongly against its utility, while in some of those in which it is used it has been employed to a manifest disadvantage; for, as before stated, it cannot be driven under the boughs of a shrub or tree hanging near the ground. These places have to be cut with the scythe, or are left as unsightly objects, thus adding to the other evils attending the machine. Most people not enraptured with the term "machine" (which carries some influence with it) have got tired of it. After many puzzling jobs at altering screws, wheels, rollers, pins, &c., the scythe has to be resorted to again, to the great exultation of the labourer, who has an inveterate dislike to machinery, and after all, perhaps, his prejudices against it are not greater than those of many of us for its adoption; but we may buy gold too dear, for, however usefully machinery may be applied to the arts and general purposes of manufacture, it has made little progress in lessening labour in the garden; and if the advocates of new machines would but test them against skilled labour, and report the result fairly, we might then have a more correct notion of their utility. Not but that mowing machines are useful in some cases. The amateur who is, perhaps, shut up for several hours in the day is anxious to have a little laborious exercise, and the mowing machine offers a useful way of obtaining it, as he can leave it off at leisure; and when there are extensive ranges of grass walks the mowing machine may be profitably used by having a steady pony or donkey to draw it. A bowling green or cricket ground may also be cut in like manner with advantage, or, in fact, any open space that is tolerably level; but where a lawn is scattered over with trees, shrubs, or beds, which most lawns are, the utility of the mowing machine is with me a questionable matter; in fact, I have no hesitation in saying the scythe is better.

J. ROBSON.

NOTES FROM THE CONTINENT.—No. 6. MOABIT.

DECIDEDLY the best garden within a considerable distance of Berlin is that of Herr Borsig, the celebrated railway-engine manufacturer, at Moabit, about two miles distant from that city. It is thrown open to the public two days a week on the payment of five silbergroschen (sixpence English) each person, the money being, it is said, used for the benefit of the poor of the village during winter. Every one connected with gardening is, of course, admitted free. The garden is visited by great numbers of people, sometimes as many as six or eight hundred in a day. Herr Geardt, the very skilful gardener, has paid several visits to England, and that he has brought back many ideas upon horticultural matters is evident in his management of the place; several Englishmen have, too, from time to time, been employed there.

Following the carriage-drive from the lodge, after passing some groups of Conifers planted out in summer, but during winter removed to a cold house, and some bronze figures of

great beauty, we arrive in front of the noble mansion. On the left is the conservatory, a half-span house, a hundred feet long; it is parted into three divisions for the sake of keeping different temperatures. A gallery runs along the back, and the wall is there completely covered with different sorts of Camellias. Greenhouse plants, such as large Acacias, Azaleas, &c., are arranged as a semicircular belt, as it were, and the space between these and the front walk is covered with a turf of *Selaginella denticulata*, upon which stand isolated specimens of *Lophosoria Deckeriana* of Dr. Klotzsch, a rare tree Fern from the mountains of Venezuela; the fine-foliaged *Rhododendron argenteum* and *R. Edgworthi*, which, though it had only one of its delicately pink-tinged white flowers open, perfumed the whole house; the gracefully pendulous *Dacrydium cupressinum*, and some others. A shelf running along the front of the house was gay with *Schizanthus* (autumn sown), *Rhodanthe*, *Acroclium*, and other annuals, with Fuchsias and Pelargoniums, the preference, among the latter, being given to the gaily-coloured French varieties rather than to the English, which excel them in form. Ivy is used to cover the end wall, and to hide from sight the hot-water pipes under the front shelf. Passing on into the warmer division, I found the same manner of arranging the plants. Here were specimens of the large pinnate-leaved *Stadmannia Australis*; *Clerodendrum Kämpferi*, with its noble spikes of flowers; the fine Oak-like foliaged *Stenocarpus Cunninghamii*; and *Ropala Corcovadensis*, with its plume-like tuft of brown velvety young leaves. On the front shelf was a collection of the best Gloxinias, Achimenes, Begonias, and young plants of the new Aralias brought into cultivation by Mr. Linden.

The Palm house stands at a right angle with the conservatory; and between the two, above the commodious potting and boiler rooms, is the Fern house, which is approached from the gallery of both houses. Against the walls little baskets made of bark are thickly placed, and in these Ferns, Lycopods, trailing species of Ficus, Tradescantias, Cissus, &c., are planted, and cover the wall very prettily. Here and there a few Achimenes have been added, and by their flowers serve to enliven the whole. Rising out of masses of rockwork are some good tree Ferns, with stems from three to eight feet high; below these are many smaller species.

The Palm house is as long as the conservatory, and broader; it is ridge-and-furrow roofed, and a light gallery runs all round it. This, like most of the other houses here, is of iron. A bronze and marble fountain occupies the centre, and around it are many remarkably fine, healthy plants. The largest are *Phoenix farinifera*, *Corypha australis*, *Latania Borbonica*, *Sabal umbraculifera*, and *S. Blackburniana*. There is also a very fine *Encephalartos Altensteinii*, with a magnificent crown of leaves (it has made nearly a hundred young ones this year); and a tree Fern (*Cyathea excelsa*), with a stem fourteen feet high, and a dozen fully expanded fronds. Below these are many smaller Palms, Cycadaceous plants, Heliconias, Marantas, Crotons, &c.; and the soil is covered with different species of Lycopods. I noticed in this house a fine specimen of *Medinella magnifica*, the flowers of which were considerably past their best; but it had produced two dozen of its large drooping panicles.

In the circular aquarium I found a young Victoria thriving very well, and some hybrid Nymphaeas not yet in flower, but said to be very fine. In one of the smaller hothouses seedlings of *Begonia diversifolia*, the best of all for autumn use, were coming up very thickly. Some persons find a difficulty in raising this plant from seed; I think it is because they are too impatient with it. This had been sown eight months, and though a few came up within a week or two after sowing, yet the pans were now covered with young plants.

A range of four span-roofed houses were devoted to the Orchids, and, although there are larger collections in Germany, there are few gardens which possess better specimens of the best kinds. Mr. Hanbury's collection, so well known in England, was purchased by Herr Borsig last year, and all the best of the new species added. Those in bloom were too numerous for me to mention now. There are many other things in the garden worthy of notice, but want of space prevents my alluding to them. The flower garden is small, but, with the pleasure grounds, fountains, and terrace overlooking the river Spree, very pretty.—KARL.

A NOTICE OF SOME SPECIES OF RHODODENDRON INHABITING BORNEO.

(Concluded from page 173.)

4. RHODODENDRON LONGIFLORUM.

SP. CHAR. Leaves verticillate, perfectly smooth, shining, obovate, convex, with a revolute edge, shortly stalked, with copious green points on both, especially the under sides. Peduncles short, erect, downy. Calyx obsolete. Corolla three or four times as long as the peduncles, with a long curved tube, and an erect, short, bluntly five-lobed equal limb, which eventually falls back. Stamens as long as the corolla. Anthers short.

"This remarkable plant," Mr. Low writes, "is found on high trees in low and damp jungles in the vicinity of Sarawak. It grows about eight feet high, and when covered with its crimson tube-shaped blossoms is exceedingly beautiful. It flowers when very small, but does not grow very freely until after it has attained considerable size. Its seeds are tailed, and in general habit it approaches the yellow and verticillate species (*R. verticillatum*)."

Although smaller in every part than the species previously described, this is hardly inferior in beauty, on account of the intense crimson colour of its long tubular blossoms. The latter are very distinctly curved, full two inches long, and grow in close heads, each consisting of from nine to ten flowers. The leaves are about one inch and a half broad, and three inches and a half long.

Mr. Low calls this species *Rhododendron tubiflorum*, a name I am obliged to alter, because it is not the same as the *Vireya* (or *Rhododendron*) *tubiflora* of Blume.

It has been suggested to me that these fine plants will not prove cultivable, because they are epiphytes. I cannot concur in this opinion. The mode of managing epiphytes is now so well understood, in respect to Orchids and Bromelworts, that even if it should be necessary to treat the Malay Rhododendrons in the same manner, no serious difficulty

can be apprehended. Blume tells us that the Java species are mostly "parasitical on trees," that is to say epiphytes; and yet the *Rhododendron Javanicum* is as manageable as *Rhododendron arboreum*.

The probability, however, is, that they do not require to be treated as epiphytes, and that, like Orchids, they will grow better if committed judiciously to the earth. It was a sagacious remark of the late Dean of Manchester, that we are wrong in supposing plants always to prefer the places in which they are found naturally. He believed that plants often occupy particular stations, and exhibit particular habits, on account of the necessity of their position, and because in more favourable places they would be smothered by the surrounding vegetation. This may possibly be the case with the plants in question. It is quite conceivable that they may have taken refuge in Borneo in the branches of trees, because of the impossibility of establishing themselves in the marshy soil of a country frequently under water for long periods at a time; and there is nothing in the nature of things to render it improbable that the saturated air may yield them all the food they require in a country visited by incessant thunderstorms, which deposit large stores of nitrogen upon every branch and every leaf.

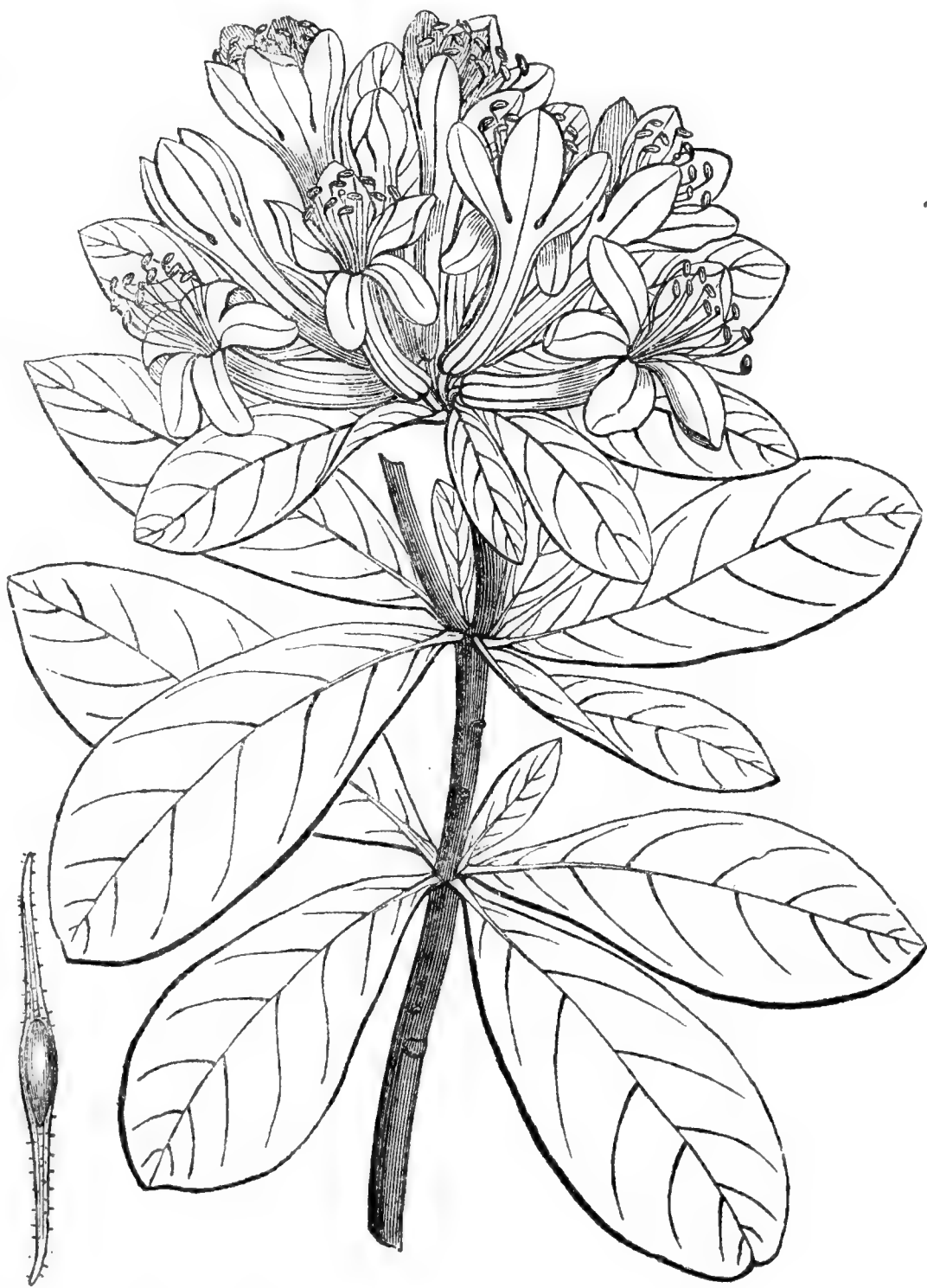
In this view of their nature it may be conjectured that the Malay Rhododendrons will grow under the usual treatment of a damp stove, provided the soil in which they are potted is chiefly composed of loose decayed vegetable materials, such as half and wholly rotten leaves and sticks. It will also be important to consider whether in resting them it will be requisite to do more than slightly lower their temperature, and diminish, without withholding, the moisture which they appear to require. From the statements of Mr. Low it would appear that

Rhododendron gracile is perpetually in bloom, a circumstance that leads to the inference that a season of rest must be almost unknown to it.

Unfortunately we have no tolerable account of the details of the Bornean climate: the temperature of the soil, or the data from which it could be computed, the amount of atmospheric moisture, the relation which the cold of night bears to the heat of day, the rate at which temperature fluctuates, are all matters upon which information is wanted. In the meanwhile Mr. Low's *Sarawak* must be taken as our best guide in the inquiry; and with the following extracts from his work the present memorandum may be closed:—

"The climate of Borneo, like that of most of the eastern islands, has been found exceedingly healthy to persons whose avocations do not render great exposure necessary. The north-east monsoon, or that which blows from April to October, is the rainy period; but a day rarely passes during the south-west or fine monsoon without a refreshing shower. This, with the constant warmth, causes everything to grow during the whole year, the forests being clothed with a perpetual verdure, which gives the islands, when seen from the sea, a beautiful appearance, possessed by no country in the world to so great an extent; shrubs (*Hibiscus*) and flowering trees (*Barringtonia*) always overhanging the margin of the ocean, and the inland mountains are observed covered to their summits with a dense and luxuriant vegetation.

"In temperature it has never been found by Europeans to be oppressively hot, the thermometer generally averaging 70° to 72° Fahrenheit in the mornings and evenings, and 82° to 85° at 2 p.m., which is generally the hottest part of the day; and though in the



dry season the mercury has sometimes ascended as high as 92°, and occasionally 93°, it has not been felt so inconveniently oppressive to Europeans as a hot summer day in England."—p. 31.

"Though the vegetation of no country in the world is so luxuriant as that of the eastern islands, it has been proved by many writers that the soil of some of them is not so fertile as the appearance of the forests would lead the cultivator to expect. This remark particularly applies to Sumatra, the forests of which are supported in their luxuriance, in a great measure, by the moisture of the surrounding atmosphere."—p. 32.

"Thunder and lightning are so very frequent as to be little regarded by the inhabitants, though the former is more sonorous and the latter more vivid than in Europe.

In all the quiet seas of the East the lightning is very much dreaded by European shipping. A heavy shower of rain is always preceded by lightning and thunder, and generally by strong wind."—p. 31.

"Left early for Sebonyoh (Dec. 6).—One mountain near it had had all its trees destroyed about twelve months since by a fire, which had been ignited by the intensity of the sun's rays on the rock beneath, and which had so dried the vegetation that it spontaneously took fire, and the whole were destroyed. Nothing but a succession of very wet summers can again restore it."—p. 399.

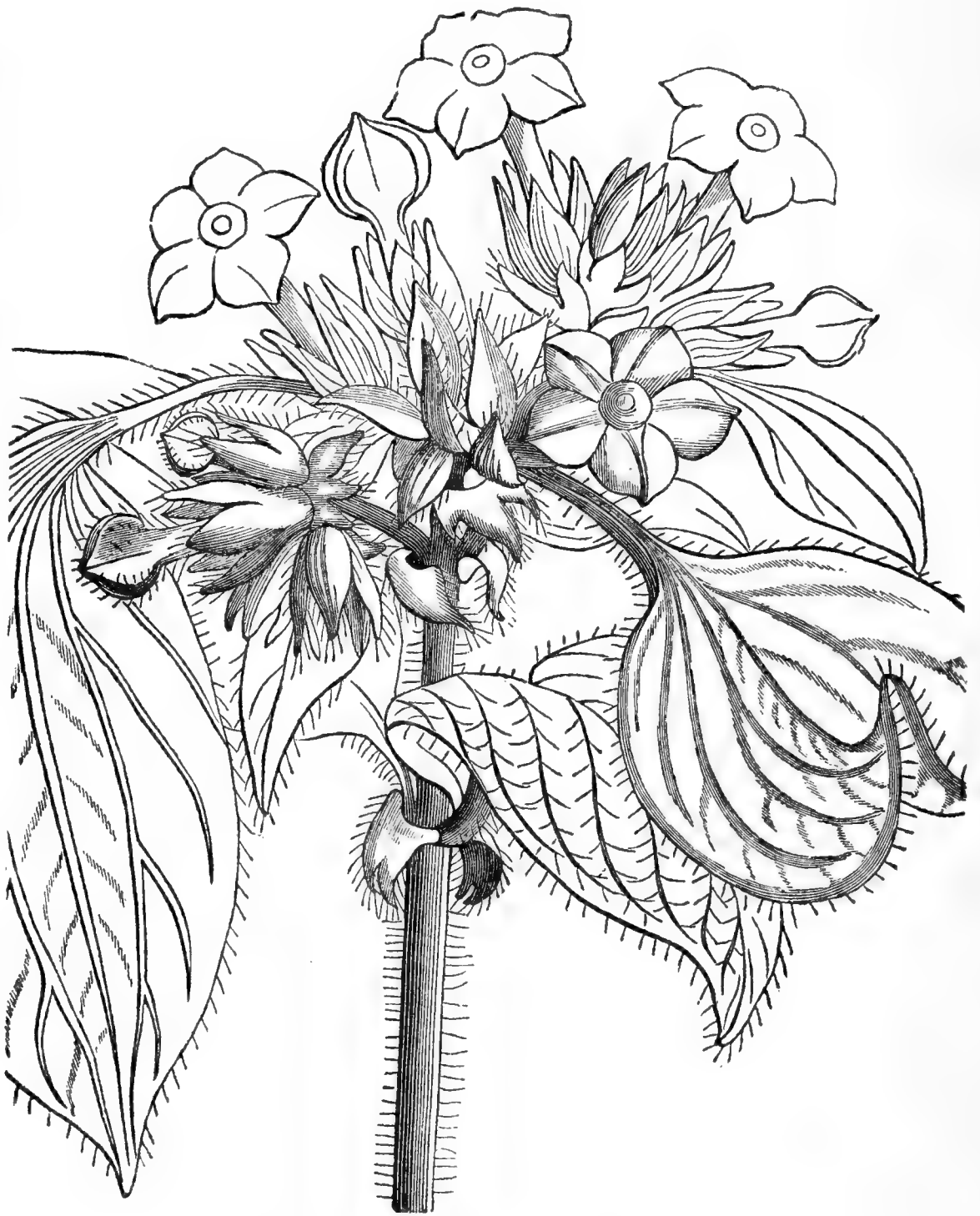
The custom of building the houses on tall posts to keep them out of the water sufficiently shows how formidable the floods must be in Borneo, and how damp such an atmosphere must be under a temperature of 85°.—(*Dr. Lindley, in Hort. Soc. Jour.*)

MUSSÆNDA MACROPHYLLA.

RECEIVED from Messrs. Knight and Perry, Nurserymen, King's Road, Chelsea, in July, 1845.

The branches of this plant are covered with coarse reddish hairs; the leaves also are hairy, ovate-oblong, acute, with bifid red-edged reflexed stipules. The flowers grow in small close heads, and are hairy like the leaves. The divisions of the calyx are ovate-oblong, stunted, and red-edged, with the exception of one which has a long stalk, is the form and size of the ordinary foliage, and has a chalky white colour, a little enlivened by a few green veins. The corolla is larger than the calyx, deep yellow, with roundish shallow lobes.

It is a rather large stove shrub, growing freely in a mixture of sandy peat and loam in equal parts. It flowers during the summer and autumn, and is easily increased by cuttings of the young wood in the ordinary way. It requires plenty of room, otherwise it is not ornamental.—(*Horticultural Society's Journal.*)



HARDY HERBACEOUS PERENNIALS IN BLOOM.—IPSWICH, JUNE 20TH, 1857.

Bahia lanata, 1 foot, yellow, dense bloomer.
Hesperis matronalis, 1 foot, white and purple, double.

Hesperis matronalis, 1 foot, single.

Vittadinia lobata, 6 in., white and red, perpetual bloomer.

Dielytra spectabilis, 2 feet, pink.

Pæony, 1 foot, white.

„ „ red.

Geum coccineum, 2 feet, scarlet, showy.

Viola calcarata, 6 inches, blue.

„ *montana*, 1 foot, blue.

Delphinium Hendersonii, 3 feet, blue and white.

„ *formosum*, 2 feet, dark blue.

„ *amœnum*, 1 foot 6 inches, blue.

„ *Barlowii*, 4 feet, double blue.

„ *grandiflora*, 1 foot 6 inches, double blue.

„ *Chinense* and others, 1 foot 6 inches.

Lychnis viscaria splendens, bright rose.

„ *flos-cuculi plena*, bright rose.

„ *coronata*, flesh.

„ *fulgens*, scarlet.

„ *Chalcedonica*, scarlet.

„ other varieties.

Salvia rugosa, 1 foot, pink.

„ *Canadensis*, 2 feet, purple.

„ *officinalis alba*, 1 foot 6 inches, white.

„ *porphyrantha*, 1 foot, bright red.

„ *bicolor*, 1 foot 6 inches, blue and white.

Digitalis, purple, yellow, and white.

Tradescantia, white and purple, single.

„ „ „ double.

Linums, white and blue ones.

Achillea montana, 2 feet, white.

„ *tomentosa*, 6 inches, yellow.

„ *eupatorium*, 3 feet, yellow.

Onosma Taurica, 1 foot, yellow.

Armeria cephalotes, 2 feet, pink.

„ *formosa*, 1 foot 6 inches, pale pink.

Ajuga reptans, 6 inches, blue.

„ „ „ white.

Silene maritima, 6 inches, white.

„ „ „ double white.

Dianthus atro-rubens, blood red.

„ *cæsius*, 3 inches, pale rose.

„ Mountain Pinks, red and white.

Helianthemums, double and single, various.
Cheiranthus alpinus, 1 foot, lemon.
 „ *Marshallii*, 1 foot, orange.
Geranium Endresii, 1 foot, bright pink, good.
 „ *Lancastriense*, 6 inches, pale pink.
 „ *sanguineum*, 6 inches, red.
 „ *palustre*, 1 foot 6 inches, purple.
 „ *pratense*.
 „ *Ibericum*, 1 foot 6 inches, bright blue.
 „ *striatum*, 1 foot, white-striped.
Veronicas, various.
Coronilla Iberica, 6 inches, yellow.
Saponaria ocymoides, 3 inches, pink.
Aster alpinus, 1 foot, purple.
Thymus serpyllum.
Lamium maculatum.
Dictamnus fraxinella, 1 foot 6 inches, red.
 „ *albus*, 1 foot 6 inches, white.
Valerians, red and white.
Lysimachia verticillata, 3 feet, yellow.
Celsia Cretica, 4 feet, yellow.
Centaurea dealbata, 2 feet, reddish purple.
Anchusa Italica, 4 feet, blue and white.
 „ *incarnata*.
Anthemis tinctoria, 2 feet, yellow.
Aubrietia purpurea, 6 inches, blue.
Phlox suaveolens, 1 foot 6 inches, white.
 „ *setacea*, bright pink.
 „ *subulata*, bright pink.
Symphitum Caucasianum, 1 foot, blue.
 „ *Bohemicum*, red.
 „ *common white*.
Scutellaria bicolor, 6 inches, blue and white.
 „ *grandiflora*, 6 inches, blue.
Spiræa filipendula.
 „ *aruncus*.
Pyrethrum roseum, 3 feet, rose.
 „ „ 2 feet, double white.
Melittis grandiflora.
Fumarias, red and yellow.
Arnopogon Dalechampii, 1 foot, lemon.
Astragalus onobrychis.
Ononis rotundifolia.
Aquilegia Whitmannii, 1 foot 6 inches, purple.
 „ *fragrans*, pale lemon.
Barbieria flore-pleno.
Catananche cærulea.
 „ *bicolor*.
Chrysanthemum leucanthemum montanum, white.
Cuphea strigillosa, orange and red.
Campanulas, numerous.
Crucianella stylosa, 6 inches, pink.
Dracocephalum Ruyschianum, 6 inches, purple.
Erysimum diffusum, 6 inches, lemon.
Stenactis speciosa, 1 foot 6 inches, blue.
Gnaphalium dioicum, 6 inches, pink.
Genista sagittalis, 6 inches, yellow.
Hieracium aurantiacum, 1 foot, orange.
Lupinus polyphyllus, blue and white.
Lotus corniculatus flore-pleno, 3 inches, yellow.
Lathyrus grandiflorus.
Lithospermum purpureo-cæruleum, 1 foot, purple.
Potentillas, various.
Phyteuma orbicularis, 6 inches, purple.
Prunella Pennsylvanica, 1 foot, blue.
Polemonium cæruleum, 1 foot, blue.
 „ *reptans*, 6 inches, blue.
Papaver orientale, 3 feet, scarlet.
Polygonum viviparum, 6 inches, white.
Ranunculus aconitifolius, 1 foot, white.
 „ *acris-plenus*, 2 feet, yellow.
Saxifraga ceratophylla, 3 inches, white.
Stachys coccinea, 1 foot, red.
Solidago virgaurea, 1 foot, yellow.
Verbascum phœniceum, 2 feet, purple.

The preceding is a list of some of the more prominent flowers at present in bloom with me. I hope your correspondent, "W. U.," will be encouraged to go on with his list of hardy perennials, accompanying it with remarks on the habit or treatment of such plants as he may think

worthy of more particular notice. We have long felt the want of information on this head. As cultivators we have groped our way unaided except by occasional short paragraphs in *THE COTTAGE GARDENER*. Doubtless many gardens throughout the country, distantly situated from each other, contain plants which, if brought into notice, would be generally inquired for and cultivated, much to the pleasure of amateurs and the advantage of the trade. Foreign gardens and countries would also yield their treasures more largely, and the lower classes partake of the benefit. It is not so much the want of taste or the want of information that keeps this interesting class of plants in the background. *THE COTTAGE GARDENER* would do good service by furnishing this desideratum.—S. P., *Rushmere*.

[It is refreshing to welcome this signature again.—Ed. C. G.]

NEW BEE-HIVE.—At the Oxford Horticultural Show on the 23rd of June the Rev. G. W. St. John exhibited some bee-hives, adapted for cottagers, on the depriving system, without destroying the bees. They were designated "Fenn's Woodstock Alliance Hives," and attracted great attention. The Mayor of Oxford (J. Towle, Esq.) also exhibited a beautiful glass of newly-made honey. We hope to have full particulars of Mr. Fenn's hives.

ON DRONE BEES AND DRONE EGGS.

In your publication of the 23rd instant your correspondent, Mr. Wighton, has opened a discussion of some interest to the naturalist. In common with him I never saw, and am inclined to doubt the reality, though alluded to by Huber, of a drone bee bred in a worker cell. I have, however, often observed that, as in the case of common bees, some individual drones are considerably less than others, and it is not improbable that the difference is sometimes owing to their having been reared in old contracted cells; for this circumstance, as Huber observes, applies, as to its effect, both to drones and workers. Moreover, I have known a dark-coloured common bee sometimes mistaken for a small drone. But a farther and more important question arises—What is a drone egg? Had not modern experience taught us differently, we should still be believing with Huber that a queen bee "can at a certain time of the year produce only the eggs of males, and at another those of workers." Farther, "that the eggs are not mixed in the ovaries of the queen, but arranged so that at a particular season she can only lay a certain kind, the eggs of workers occupying the first place in the oviducts." All this is notoriously erroneous, Dr. Dunbar, Dr. Bevan, and Mr. Wighton himself having, with others, observed that the order of laying is frequently disturbed, the queen depositing an egg one minute in a worker, and the next in a drone cell. The eggs are *not*, therefore, separated in the oviduct, nor, as I believe, anywhere else. Still less is there the slightest probability that the queen is directed by any instinct to understand that one egg differs from another, and that this influences a selection at the time of laying. I no more believe she is aware of the sex or other peculiarity of the egg than a bird in laying, or a female of her unborn offspring. And next, as bearing on the subject, let me say a word as to the effect of forcibly retarding the impregnation of a queen, inducing solely the production of drones, the cause of which Huber says "has not yet been discovered." He declares it to be "an abyss in which he is lost." How if Huber himself should have unconsciously explained what I am inclined to believe is the real cause of the anomaly, viz., simply bodily malformation in the queen, resulting from the unnatural treatment to which she has been subjected? Huber proceeds to state that "the bodies of queens are shortened where fecundation has been retarded, whilst the two first rings next the thorax are uncommonly enlarged." Here, then, to my mind, is an explanation of the mystery. The poor queen is disabled from depositing her eggs in any cells but large ones, and even in these we have the further authority of Huber for the fact that she is prevented from reaching "the bottom on account of the swollen rings, consequently the egg remains attached to the part reached by it." The worker cells are, of course, rendered

unavailable for breeding, and hence the perplexing theory as to the sole propagation of drones. It ought to be in recollection that at one time it was thought that three varieties of egg were needed for producing the three distinct individuals in a bee family. As regards a young queen we now have discarded one portion of this error. Why may we not proceed another step, and consider whether more than a single kind of egg is requisite for the production of queens, workers, and drones? All reasoning seems to me (and I speak with diffidence) to favour this theory. But how comes it to pass that an egg deposited in a large cell should produce male bees? Who is to dive into the mysteries of Nature, and determine the laws by which she brings about certain results? Is there anything more wonderful than the change wrought by enlarging the cell of a worker grub, altering the character of its tenant altogether, giving to it a new form and body, new wings, new legs, new instincts, and a new occupation? Some observers deny the necessity of any peculiar aliment to bring about this *perfection of miracle*, believing, as the alternative, that an elongated habitation alone is needed. But why, if one altered form of dwelling is sufficient to produce so wonderful a result, may we not go the length of accepting the belief that a different one is adequate to the production of another variety of the same insect? I cannot, however, entirely discard the idea that the three individual bees *are* influenced in their formation and development by a varied suitable nutriment respectively, sometimes acting on the grub to stimulate and hasten development, and, as needed in the case of the drones, at another to retard it. It is nothing to the purpose to say that we are unable to detect the infinitesimal proportions of the substances entering into the different compounds which Nature may have prescribed for the accomplishment of her object. Be this as it may, we perceive certain results, and moreover know, as regards some of them, that science has dispelled an accumulation of error, though difficulties may yet remain to be solved. The question, How is it that the grubs of the large cells all become males? can only suggest another—Why do the small cells contain female bees? Nature has so willed it. Like a thousand other of the ways of Providence it may be past our finding out, but the theory I have suggested for consideration presents to my mind fewer difficulties than any other. Nor does it contradict the well-known instinct that prompts a queen bee, at certain prescribed periods, to deposit her eggs in such cells as the perpetuation of the species unquestionably demands. I fear I have already trespassed at too great a length on your valuable pages, and will only add that my remarks have not been the result of any original scientific experiment; nor, in pointing out some evidently erroneous conclusions of Huber, do I abate one jot of the high admiration in which I hold the attainments of that great investigator.—AN OLD APIARIAN.

NOTES FROM AUSTRALIA.

SYDNEY MARKETS.—FRIDAY, MARCH 27.

[UNLESS otherwise expressed the prices quoted in this article are those in transactions between the producer and the first purchaser, not as between one dealer and another, much less the retail prices.]

WHEAT AND FLOUR.—Messrs. Barker and Co.: No alteration has taken place in the price of flour, but the market has acquired considerable firmness. So little of the home-grown wheat is brought to town in a marketable condition—so damaged by wet that scarcely one load in ten is fit for the manufacture of fine flour—that ere long the millers will be compelled to have recourse to imported grain. Fine flour, £18; second quality, £16 per ton of 2000lbs.; bran, 1s. 6d. to 1s. 9d. per bushel; wheat, 6s. 6d. ditto. Mr. Breillat: Quotations at this mill remain the same as last reported. Fine flour, £18; seconds, £16; bran, 1s. 6d. to 1s. 9d. per bushel; wheat, 5s. to 7s., according to quality.

BREAD.—5d. per 2 lb. loaf.

BISCUIT.—Messrs. Wilkie and Co. quote: Best cabin at 24s.; navy, 20s.; and ship, 18s. per 100 lbs. Mr. Hamilton: ship, 18s.; navy, 20s.; cabin, 24s. per 100 lbs.

BUTCHERS' MEAT.—The carcase butchers are supplying beef at 1½d. and 1¾d., and mutton at 2½d. to 3d. per lb. The

retail prices vary, according to the joint, from 3d. to 6d. per lb.

POULTRY AND DAIRY PRODUCE.—Fowls, 3s.; ducks, 4s. to 5s.; geese, 10s.; turkeys, 12s. to 20s.; pigeons, 1s. 6d. to 2s. per couple. Roasting pigs, 4s. to 5s. each. Butter, 9d. to 1s.; cheese, 6d. to 7d.; bacon and hams, 8d. to 10d.; lard, 6d. to 7d. per lb.; eggs, 1s. 9d. to 2s. per dozen.

VEGETABLES.—Potatoes, £5 to £7; onions, £12 to £16 per ton; cabbages, 3s. to 8s.; cucumbers, 1s. to 2s.; lettuces, 1s. to 2s. 6d.; turnips, 3s. to 4s.; celery, 5s. to 8s.; leeks, 1s. to 1s. 6d.; parsnips, 2s. to 3s.; carrots, 3s. 6d. to 4s.; pumpkins, 3s. to 8s.; vegetable marrow, 2s. to 4s. per dozen or dozen bunches as the case may be. Green peas, 12s. to 14s.; French beans, 2s. 6d. to 3s. 6d. per bushel.

FRUITS.—Oranges, 1s. 6d. to 2s.; Lisbon lemons, 1s. to 1s. 6d.; figs, 2d. to 6d.; bananas, 1s. to 1s. 9d.; water-melons, 4s. 6d. to 8s.; rock-melons, 4s. to 12s. per dozen. Apples, 5s. to 9s.; pears, 2s. 6d. to 5s.; peaches, 1s. 6d. to 3s. 6d.; quinces, 1s. 6d. to 2s. per basket; grapes, 4d. to 5d. per lb.

CURRENT RATES OF WAGES.

TOWN—PER DAY.

£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Painters	0	0	0	0	10	0	Masons, full	0	12	6	0
Carpenters, full	0	12	0	0	14	0	Ditto, short	0	13	6	0
Ditto, short	0	10	0	0	11	8	Labourers	0	8	6	0
Plumbers	0	12	0	0	15	0	Quarrymen	0	14	0	0
Joiners, full	0	12	0	0	14	0	Blacksmiths	0	10	0	0
Ditto, short	0	10	0	0	11	8	Carters	0	8	0	0
Plasterers	0	13	0	0	0	0	Engineers	0	13	0	0
Labourers	0	9	0	0	0	0	Shipwrights	0	12	0	0
Coopers	0	12	0	0	14	0	Tinplate-workers	0	10	0	0
Bricklayers	0	14	0	0	16	0	Tailors	0	9	0	0
Labourers	0	9	0	0	11	0	Wheelwrights	0	12	6	0

PER WEEK.

Printing work ..3 0 0.3 6 0	Bookbinders ....2 10 0.4 0 0
Compositors on "stab" ..4 0 0	Bakers.....2 10 0.3 10 0
<i>Herald</i> , Morning Paper.	*Butchers .....1 5 0.2 10 0
Long primer, brier, and nonpareil — equal- ised to 1s. 6d. per 1000, and 1s. 7d. per hour time-work. The <i>Em- pire's</i> rates are about the same. At these rates men can earn, ac- cording to competency, from..... £3 10 to..7 0 0	Boot and cassock makers.....2 10 0.3 0 0
	Watchmakers ...4 0 0.5 0 0
	Pastrycooks ....2 10 0.3 0 0
	*Men cooks ....0 15 0.1 0 0
	Cabinetmakers ..2 10 0.3 0 0
	Soap-boilers ....3 0 0.3 10 0
	Storemen .....2 0 0.2 5 0
	Light porters....2 0 0.2 5 0
	* With board.

PER ANNUM, AND FOUND.

Male servants..	35	0	0	50	0	0	Married couples	50	0	0	60	0	0
Cooks	40	0	0	60	0	0	General female						
Coachmen	50	0	0	60	0	0	servants	20	0	0	28	0	0
Grooms	40	0	0	52	0	0	Laundresses ..	26	0	0	30	0	0
Gardeners ...	35	0	0	45	0	0	Housemaids ...	20	0	0	26	0	0
Female Cooks	26	0	0	30	0	0	Nursemaids ...	20	0	0	25	0	0

COUNTRY—PER ANNUM, WITH RATIONS.

[The rations are—Flour, 8 lbs. to 12 lbs.; meat, 10 lbs. to 14 lbs.; sugar, 2 lbs.; tea, ¼ lb., weekly.]

Farm labourers	30	0	0	40	0	0	Stockmen	40	0	0	45	0	0
Ditto, married couples	50	0	0	55	0	0	Bullock drivers	40	0	0	45	0	0
Hutkeepers	25	0	0	27	10	0	Ditto, on roads	50	0	0	55	0	0
Garden lab'ers	0	0	0	40	0	0	Ploughmen	35	0	0	45	0	0
							Shepherds	25	0	0	30	0	0

MUSHROOMS.—Mushroom growth has the same peculiarities attending it in this region as in any other part of the world, as every one who has seen the pileate vegetable flourishing on our flats will have observed. The two seasons when Mushrooms are to be looked for are just now and at the approach of summer; and continuous rains like the present will provide a spontaneous yield of them to the extent of a bushel a day upon a five-acre grass paddock well manured. The species of *Agaricus* vary as much in their production here as they do in other countries; and, taking into consideration the many strange species we find on broken lands and within the forest shade, they are probably more largely diversified among us than elsewhere. The true Mushroom, which varies in the size of the *pileus* from the diameter of a wine-glass to that of an ordinary tumbler, and is of a dark colour, with little or no spongy substance, is the prevailing growth of established grass lands, though an unwholesome *Agaric*, pink tinted, is often associated with this, and should on no account be gathered. We think it useful, if not, indeed, important, to call attention to the fact that a most excellent article, in all respects equal to the catsup so largely produced in England, and supplied from thence in such considerable quantity to the colonial mar-

ket, may be made at our stations and settlements, and profited by as an article of commerce much inquired after by licensed victuallers and private families, many of whom are accustomed to say, "What we want is a really good article;" and it seems to be thought that the bottled catsup sold by grocers is somewhat inferior, at the same time that the price is a shade too high. We might suggest to the enterprising parties who should be inclined to go into this department of produce, that their apparatus need consist only of a quarter-cask sawn in two unequal parts, the larger being supplied with a cover, and intended to receive from time to time supplies from the smaller after boiling. The modes of proceeding with the Mushrooms and with the liquor would be as follows:—Suppose a bushel of Mushrooms to have been gathered at one time, the caps having been separated from the stalks and rinsed, they would be put into the smaller tub in layers, each of which should have a moderate sprinkling of rough salt. The liquor and caps together would next morning be boiled, in an ordinary boiling-pan, until the liquor was heavy enough to float an egg. It could either be strained in this condition or put into the larger tub, and the straining left until the making was complete, or no more Mushrooms could be had, and the liquor in this form was to be casked off and sent away. The spicing would not be necessary, and the proper density of the liquor being arrived at, its salt quality would secure its preservation. The commercial value of such an article is 5s. a gallon in England: here it would be 6s., and a few hogsheads of it coming from reliable hands would at the present time or during the present season fetch this price in Sydney. We shall not be considered presumptuous for having submitted these remarks upon a commodity which may, indeed, appear a small matter, but our commercial production of which may serve to enlarge, in ways unseen, our scope for administering to the comforts of our sustenance. It is a little to be wondered at that, so differently situated as we are from the mass of the people of England, with whom the practice of eating animal food is more restrained than we find here, we are remarkably indifferent to modes of giving a piquant relish to our dishes. We may mend in this respect, and, in aiming to do so, begin by producing a first-rate Mushroom liquor.

COLONIAL RAISINS.—We have been shown a sample of colonial Raisins prepared from this year's Grapes by Mr. Prior, of Maclaren Vale, near Adelaide. The Grapes selected are the Muscat of Alexandria, and the clusters of Raisins made from them are really of a very superior description. Their only fault consisted in their not being sufficiently dried and pressed. Mr. Prior, however, professes himself able to fulfil these two desiderata; and should he succeed he will certainly have the merit of producing a most excellent and marketable article.

THE OPOSSUM NUISANCE.—Many parties residing in the bush have latterly complained to us of the extensive depredations committed by opossums on farms which happen unfortunately to be surrounded by thickly-wooded country. On moonlight nights especially they pour down in great numbers, when neither corn, wheat, fruit, nor vegetables escape their attacks, and in many instances the amount of damage done is really serious. On the Fish River, for instance, a considerable amount of damage has been done by these quadrupeds, where, owing to the disappearance of the blacks, with whom the opossum is the principal article of food, they have increased to an astonishing extent. It is no uncommon thing, so we are told, to shoot forty or fifty in one night, and the fear is that, unless some means of extermination are adopted, they will become almost the sole occupants of certain portions of the bush. The matter rests in the hands of the settlers themselves, whose organs of destructiveness will be stimulated to action by the law of self-preservation.—(*Sydney Morning Herald*.)

EARLY SWARMS.—I see an inquiry by "G. FRY" as to whether you were aware of any swarming previous to the 11th of May. I beg to state that we had one on the 9th of May, and this time three years we had one on the 21st of April, hived on the old principle of the cottage straw hive.—E. H. H., *Strood, Kent*.

NEW AND RARE PLANTS.

ECHEVERIA CANALICULATA (*Channelled-leaved Echeveria*).

This Crassula-like plant is showy. It is a native of the Real del Monte Mountains, in Mexico. Flowers crimson, blooming in April.—(*Botanical Magazine*, t. 4986.)

GARDENIA CITRIODORA (*Orange-scented Gardenia*).

This native of Natal, though known in 1849, was but recently grown by Messrs. Rollisson, of Tooting. It is a two-foot-high evergreen shrub; scented, as the name implies; flowers white, tinged with pink; blooms in May.—(*Ibid.* t. 4987.)

BEGONIA WAGENERIANA (*Wagener's Begonia*).

Found at Venezuela by Mr. Wagener. It is the *Moshkowitzia Wageneriana* of Klotzsch. Male flowers creamy white; female flowers pale yellowish green. Blooms in April and May.—(*Ibid.* t. 4988.)

XANTHOSOMA SAGITTIFOLIUM (*Arrow-leaved Xanthosoma*).

This is really an Arum from the tropics, and is the *Arum sagittifolium* of Linnæus. It is a native of South America, and "was introduced to the Royal Gardens at Kew, from the West Indies, prior to the year 1710. In Jamaica, according to Lunan, it is extensively cultivated as an esculent, little, if at all, inferior to the *Colocasia antiquorum*; in wholesomeness and delicacy far superior to Spinach; and in this respect it may vie with any European vegetable whatever. It blooms in our stoves during the winter." Leaves from one to three feet long; flower creamy white; spadix very large, and hexangular-netted.—(*Ibid.* t. 4989.)

CYPRIPEDIUM HIRSUTISSIMUM (*Most hairy Lady's Slipper*).

Believed to be a native of Java, and purchased at a sale of East Indian plants by Mr. Parker, of Hornsey. It bloomed in April, 1857. The flowers are purple and green.—(*Ibid.* t. 4990.)

QUERIES AND ANSWERS.

BEEES NOT SWARMING AND DRONELESS.

"I have two stocks, one an old one which has not swarmed for two or three years, the other a swarm of last year. They work pretty well. I have been very desirous they should swarm, but no symptoms of swarming appear. They seem to have no drones; at least, none have as yet made their appearance, except one or two little undergrown things which I saw crawling about on the ground unable to fly. They are tolerably heavy. Now, it strikes me their defect arises from a want of fertility in the queens, as probably they are old.

"I think we bee-keepers have yet something to learn in their successful management. I have closely observed them for years. I have read nearly everything published on the subject, and tried many sorts of hives, about which there is a good deal of nonsense. The great secret of success does not, in my opinion, consist in the material or shape of the hive."—EDWARD FAIRBROTHER.

[Families of bees, like those of men, will grow old in time. One at least of your stocks seems to be worn out, and most likely is filled with combs ill adapted for their original purpose—the rearing of brood. You may as well get rid of it in the autumn by fuming the hive. We cannot account for the other stock not swarming any otherwise than by saying that all families do not thrive equally well anywhere. Possibly the queen may not be a prolific one. In this case the absence of drones is not unusual. The stock being a young one, it will another season probably have the advantage of a changed queen. You are right to gain as much information from books as you can; but no author beyond a common quack can direct the bee-master to any certain method or hive that in all times, seasons, and places will act with uniform success. The "nonsense" is with those who expect it.]

RIGHT TO STRAYED BEES.

"I have a hive of bees which swarmed on the premises of a farmer, and he says he will make me pay damage for following them. Please to say if he can, or what hold he has of me."—A CONSTANT READER.

[Blackstone, in his "Commentaries," says, "A swarm which fly from and out of my hive are mine so long as I can keep them in sight, and have power to pursue them; and in these circumstances no one else is entitled to take them." Indeed, if the rightful owner quickly pursues the swarm, and keeps them in sight, and any one else should hive and keep them, it would be a larceny. We believe that if the bees have been quickly followed from the hive whence they swarmed, and have never been lost sight of, their owner is entitled to follow them on to another man's land and hive them. If the man on to whose land the bees strayed took possession of the swarm, or prevented the owner from doing so, we think the owner would have a legal remedy against that man. Of this we are quite sure—*no one who is honest will prevent the owner of a strayed swarm following and recovering it.*]

TO CORRESPONDENTS.

LATERALS OF NECTARINES (H. Bishop).—If the lateral shoots are so placed as to be available without crowding too much we say by all means nail them in; but if there is already sufficient wood on the tree merely cut them back, or keep them short by pinching, and you will, in all probability, throw them into a kind of spur called a *brindie*. Besides the young wood, Peaches and Nectarines bear also on these brindles.

N.B.—Very many inquiries and their answers are unavoidably kept back until next week.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JULY 8th, 9th, and 10th, 1857. LEAMINGTON. Sec., Thomas Grove.
 JULY 9th. PRESCOT. Sec., J. F. Ollard.
 JULY 20th. ROYAL AGRICULTURAL SOCIETY. SALISBURY. The Exhibition will be open to the public on the 22nd.
 JULY 28th, 29th, and 30th. SHEFFIELD, SOUTH YORKSHIRE, AND NORTH DERBYSHIRE. Sec., William Henry Dawson, Fig Tree Lane, Sheffield.
 AUGUST 8th, 10th, 11th, and 12th. CRYSTAL PALACE. Sec., W. Houghton. Entries close on the 11th of July.
 AUGUST 19. BRIDLINGTON. Sec., Mr. Thomas Cape.
 AUG. 29th. CALDER VALE. Sec., W. Irvine, Esq., Holmefield, Halifax.
 SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.
 SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Sec., Mr. H. Churchill, King's Head Hotel.
 OCTOBER 1st and 2nd. WORCESTER. Sec., Mr. G. Griffiths, 7, St. Swithen Street, Worcester. Entries close Sept. 19th.
 NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.
 DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.
 DECEMBER 30th and 31st. BURNLEY AND EAST LANCASHIRE. Entries close December 1st. Secs., Angus Sutherland and Ralph Landless.
 JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.
 JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.
 N.B.—Secretaries will oblige us by sending early copies of their lists.

CRYSTAL PALACE POULTRY SHOW.—BREEDING GOOD CHICKENS.

AMONG the numerous Poultry Shows of the present year there certainly is not one possessing more general interest than the great meeting that is to take place early in August next at the Crystal Palace, Sydenham, the entries for which, be it remembered, finally close on the 11th of the present month. One very great additional interest is undoubtedly insured from the fact that every head of competing poultry must, as stringently laid down in the second regulation, "be the produce of 1857." Such appointment of necessity altogether excludes the presence of those pens of poultry so generally familiar to the practised eyes of both Poultry Judges and the more enthusiastic of our poultry amateurs as the customary prize groups of bygone exhibitions. All must be chicks, and thus novelty will be insured throughout the whole collection. That this will necessarily add unboundedly to the interest of both poultry amateurs and the sight-seeing visitors admits of

no doubt, whilst the unequalled local advantages the Crystal Palace itself possesses for the purpose of triumphantly carrying out such an Exhibition are of the highest possible character. Among these, one that should be more highly appreciated among the owners of exhibition poultry, is the total exclusion of all draughts of cold air, though combined with the free admission of unrestricted light which the Palace affords, with the additional advantage, too, of sufficiently roomy exhibition pens. These are, indeed, very strong points in favour of this particular Show, as, unquestionably, chickens in all cases bear restraint and discomfort of any kind far less equably than adult birds. To the competing chickens of the 8th of August next all will be strange, and the confinement a trial to which they have been quite unaccustomed. It must, therefore, be a matter of great congratulation to their respective owners to know that their valuable favourites are temporarily consigned into the care of parties of long-practised experience in regard to all their wants, and who have heretofore proved themselves equally as anxious as they were able to fulfil properly every engagement their duty required. It is not needful to say much on another most important feature that will inevitably result from prize-taking at the Crystal Palace Summer Show, viz., how strongly it will influence the ready sale of surplus chickens from the yards of the successful, and likewise enhance the money value of such extra stock generally.

The result will prove, most probably, that chickens hatched very early this year have frequently been reared far more successfully than broods produced in March and April, and from this cause it is the opinion of those best acquainted with matters connected with poultry breeding that the specimens that will then appear will greatly excel any collection that has been hitherto brought together so early in the season. It is quite needless to dwell, too, on the fact of the varied independent sights the Palace affords, so far-famed as they are, and all available to those who attend the Poultry Exhibition. The numbers of visitors will therefore, no doubt, be very great, and the past experience of the Crystal Palace Poultry Show best proves how easily pens of good poultry are disposable under such circumstances, and that, too, at prices highly remunerative to the breeder.

Now that this brief consideration of the Sydenham Show brings more especially the subject of *chickens* before poultry breeders, the writer of this article, with your permission, is desirous of publicly laying before your readers a cause that seems to have almost wholly escaped the consideration of a large body of poultry amateurs as to an ever-decreasing value of the progeny of their poultry-yards, and on which subject scarcely of late a single week passes in which I have not been by private letter consulted, and advice as willingly rendered. Still the probability being that many others find themselves in the same predicament, and, from overlooking the cause, "can assign no reason" for the result, therefore I will succinctly allude to it. To render the matter at once clearly understood I will repeat verbatim one of many queries very lately received on this subject:—"Could you favour me with the cause why the chickens I now breed are so infinitely inferior to those I obtained a year or two back from the SAME old birds?" I will not do more than allude to the everywhere accredited fact that "runs" long used produce sickness and inevitable injury to present stock, but at once proceed to another cause that, though occult, tends as invariably to deterioration, first passing over the habit of interbreeding too closely as most condemnatory throughout all animal creation, and worthy only of especial avoidance. But the querist wishes to know "why the present inferiority with the self-same parent birds as formerly, which then produced the most superior chickens?" I am confirmed in this opinion by oft-repeated trials—that the gradual decline of individual constitution in the size of such poultry tends incredibly to produce such results; that while the almost uncared-for fold-yards of our agriculturists are free from such calamity, the infinitely more highly-esteemed flocks of amateurs, who let no expense deter them from adopting every available advantage, are constantly the subject of this most vexatious discomfiture. Let us cast a glance over the difference that exists among birds or animals in a state of nature, and those thus subjected to the misapplied, and, in many instances, over-anxious care of mankind.

With creatures perfectly wild, remaining unrestrained as Nature herself formed them, it is surprising, at first sight, to note how great a number of males are produced than it strikes us are necessary for procreation. Still this is soon rectified; the most robust drive away the weaker ones, and not unfrequently positively destroy them; consequently the more vigorous male becomes the sire of the next immediate offspring. Still it by no means follows that he should remain triumphant in succeeding years. We can continually find instances in our fold-yards where a cock that has maintained inviolate his supremacy one full season has the next spring been subjected to maltreatment and oppression from a stronger and younger bird, his own former victim. Thus treated he indeed becomes "a changed bird, literally hen-pecked," and generally one of the most forlorn and abject creatures imaginable. The hens that hitherto were *his* most friendly associates now lavish their favours on the more vigorous and better constituted new comer, scrupulously avoiding the old bird, and degeneracy is thus instinctively prevented.

We know the same habits prevail, without exception, among deer, pheasants, and most other creatures thus placed closely under our inspection, though still at liberty; and the effort is also made to carry out similar results under even the closest domestication, while our own obdurate determination to force Nature in these instances from her accustomed habits leads as invariably to our future disappointment. The truth can be soon told. Amateurs are directly prone to two equally ill-advised practices. First, if a male bird has been able to gain high position at Poultry Shows, combined, perchance, with the production of extraordinary chickens, he is retained long beyond the time it was advisable to keep him as a "stock bird." The other error is equally mischievous. From possessing some much-desired peculiarity of feathering, a cockerel is most unwisely selected, puny and without constitution. Then it is complaints arise of astonishment that "the chickens are not to be reared—they die off in spite of everything." Had a vigorous, high-conditioned bird, such as usually makes himself "master" among his own brother cockerels, been the appointed one, the troubles of its owner would frequently have been altogether obviated, and entire and healthy broods would have reached full maturity. I am confident when any race of poultry has arrived at all the required features fancy dictates as the uncompromising rule of absolute perfection (and they are certainly acquired by long-continued attention to careful mating of the parent birds), progress itself is not more unattainable than the *perpetuity* in all respects of the "points" so long coveted. They must, in this case, be crossed with strange blood, or they will infallibly breed out altogether. Whether the introduction produces the desired end of improvement of constitution, without the loss of highly-valued characteristics of the peculiar "strain," depends entirely on the discrimination of the owner. It requires both judgment and forethought.

To prove the evil arising from the false supposition that because the offspring of a cock was undeniably good in former years it must necessarily, from the same hens still running with him, be of equal excellence at the present time, I will mention a fact that came to my own knowledge. A friend of mine purchased some unexceptionable Grey Dorkings. For three years the produce was equally large with the parent birds, and true, likewise, to a feather as to general colouring. The chickens the next two years "sported all colours," and in size degenerated exceedingly, no additional brood stock having been retained in the interim. To test the old *hens*, a son of one, bred two years previously, was repurchased, and turned down in lieu of his own male parent. Every chicken produced to him was equally good in colour as they had formerly been in the youthful days of his sire, but did not attain so good a size. At four years old this latter bird produced chickens "all colours," and was this spring removed to make way for a younger one, a cockerel of last year. This last bird's chickens, so far as can yet be seen, are all true Silver Greys, without any spangling in the breast, or, indeed, any deterioration of colour. To me, I admit, it is strange, though true, that such want of general uniformity of plumage should accrue simply from age in the male bird; but of this I am equally aware—an *ex-*

cessively old cock Sebright Bantam *invariably* begets chickens with most imperfect "lacings," though himself strongly marked on his own plumage, whilst no such imperfection is general from long life on the *hen's* side. From what I have adduced I think it is pretty apparent that the most vigorous cockerels should always be the selected ones for "breeding," even where it is still considered desirable to retain an especially good old cock simply for exhibition: it will prevent many troubles.—EDWARD HEWITT, *Eden Cottage, Sparkbrook, Birmingham.*

POULTRY JUDGES—ONE OR MORE?

It seems, from several communications which have recently appeared in THE COTTAGE GARDENER, that serious dissatisfaction prevails as to the decisions of the Judges at some of our Poultry Shows, and allusions are made to evils of so gross a character, that, should they prevail to any extent, it is certainly time a stringent remedy was applied. My own impression was that the decisions, if not always correct, were at least honestly given. I was, therefore, a little startled to find a gentleman with the experience of Mr. Hewitt recognising the existence of "favouritism," and even "confederacy," meaning, I presume, by the latter term, a corrupt and fraudulent arrangement between the Judge and an exhibitor, in pursuance of which the prizes are awarded. If such practices exist they rival in infamy the worst rascalities of the turf, and whoever may devise an adequate remedy for them is fairly entitled to the gratitude of all who take an interest in our Poultry Exhibitions. But, having read Mr. Hewitt's letter with the attention due to his reputation as a Poultry Judge, I have failed to satisfy myself that his arguments in favour of a single Judge, rather than several, are at all conclusive.

When erroneous decisions are given they may be referred to one of the three following heads:—1. Incompetency or oversight. 2. Partiality or favouritism. 3. Confederacy, or collusion between the Judge and an exhibitor. Under each of these heads I think a plurality of Judges offers more securities for just decisions than can be obtained from a single Judge. Let us first take the case of incompetency. If a single Judge is appointed who is unequal to any portion of the task allotted to him, it is only by a series of lucky accidents that his decisions can possibly be right; but if there are several Judges the Committee must have been very unfortunate in their selection if they do not possess among them the requisite knowledge for a proper award of the prizes. As to oversight, or neglect to notice all the points either of excellence or defects in the competing pens, I think this is much less likely to occur with several Judges than with one. I assume, what is now almost invariably the case, that the competition is very keen, and that in awarding the prizes it is necessary to scrutinise and balance a number of minute points. This surely is an operation better performed by several Judges than by one. Indeed, I think it would be difficult to devise a plan more certain of bringing under the consideration of Judges all the facts which ought to influence their decisions than the mode of proceeding where several Judges are appointed. Having gone through a class, they compare their impressions and opinions; if they are agreed, the prizes are awarded, and the fact that they all independently have arrived at the same conclusions is a strong presumption in favour of the pens selected for the prizes. If a difference of opinion exists discussion takes place; points which may have escaped the observation of one are brought into notice by another; and thus, in all probability, all the facts are elicited upon which the decision should be founded.

Let us now consider the case of partiality or favouritism. It is quite possible a single Judge might give an unjust decision from this cause, but it is far less likely that several Judges would do so. We will suppose that three Judges unconnected with each other are appointed. It is possible each may have certain preferences and partialities; but it is highly improbable that all three would be influenced by the same feelings, and thus there would be a check upon any improper bias of this kind.

But if erroneous decisions from incompetency, oversight, or partiality are less likely to occur with several Judges than with one, I think this is still more the case should there

ever unfortunately exist an infamous arrangement between a Judge and an exhibitor. Collusion with one Judge may, in some instances, be possible; but a collusion with three is what few exhibitors would have the audacity to attempt, and is, in fact, an evil which no one seriously apprehends. It may, therefore, be assumed that, in all cases where the Judges are selected with care and a honest purpose, a portion of them at least are men of honour and integrity, and it surely is not to be taken for granted that they have nothing else to do than to indorse the iniquities of their dishonest colleague. Nor is it beyond the truth to say that instances have occurred where a reprehensible bias in the mind of one Judge has been resisted and counteracted by the firmness and integrity of another.

But Mr. Hewitt argues that if the responsibility was concentrated on a single Judge he would not dare to award prizes from partiality or any other corrupt motive. Probably not if the pen which was the object of the unjust preference was grossly and manifestly inferior to others, and the connection between the Judge and the owner was notorious. Such decisions would be fatal to the reputation of any Judge, and under every system of judging would be too monstrous to be endured. What we have to provide securities for are the cases where the pens unjustly selected have sufficient merit to give some appearance of fairness to the decisions, and the connection between the Judge and the exhibitor is unknown. The latter at all times it would be difficult to prove, as both of them would have an interest in concealing it. I therefore doubt the efficacy of a responsibility which may be so easily evaded, and, if Committees are careful to select none but men of honour and intelligence to act as Judges, I think such evils as those referred to must soon cease to exist. The force of opinion is also a restraint upon delinquent Judges. Every large show is now attended by numbers quite as capable as the Judges to form an opinion on the merits of the pens exhibited, and the perfect freedom with which the awards are discussed indicates the reverse of respect for the authority from which they proceed. This even now must operate as a check of some force, and it will advance in strength as every year increases the number of those who are capable of forming an intelligent judgment on the subject. To all fair and candid criticism I believe your columns are open, and some good might result by referring in the published reports of shows to such decisions as may be considered erroneous, especially if the grounds on which the awards were impugned were fairly and distinctly stated.

Mr. Hewitt adduces two other arguments in favour of single Judges. The first is, that the awards would be made with greater rapidity; and the second, that a dissentient Judge who had been outvoted would not be responsible for the decisions. Assuming there would be more speed, which I think is extremely doubtful, this is not a circumstance of any importance.

What is required by all who take a legitimate interest in our exhibitions is, that the awards should be correct and scrupulously honest, and they care very little whether a few hours, more or less, are occupied by the Judges in performing their duties. Mr. Hewitt's remarks in reference to the position of a Judge who has been outvoted by his colleagues are perfectly just, and I see no reason why a Judge in this position should not be permitted to state in the prize-list, where a prize-list is published, that he dissents from such decisions as he considers incorrect or unjust. If no prize-list is published this might be done by means of a card attached to the pens. If this practice were adopted he might always relieve himself from all responsibility as to decisions which he considered either grossly erroneous or proceeding from some dishonest motive.

Mr. Hewitt concludes his communication by suggesting that, in all cases where "*a complaint*" or even "*misgiving*" exists as to the misconduct of a Judge, an open accusation should be preferred. No doubt, if an accusation is to be made, it should be an open one, with full notice to the party implicated; but evil rather than good would certainly be the result should the practice ever prevail of calling the Judges to account for their decisions.

The upright Judge who had no sinister objects to promote would refuse to act, rather than incur the risk of the insulting annoyance of being put upon his trial by any

angry or disappointed exhibitor who had a "*misgiving*" as to one or more of the awards. We should thus lose some of our best and most conscientious Judges; but the tricky and unscrupulous, relying upon the facilities of evading detection, and the difficulty of obtaining proofs, would, I fear, fail to be influenced by that salutary alarm which might keep them in the path of rectitude.

Mr. Hewitt, I think, must feel the difficulties attending accusations which affect the integrity of a Judge. In his communication he refers to "flagrant" decisions "pertinaciously adhered to," founded upon "private reasons," "where after-proof convinced the most sceptical," and a "special few," "who by compact endeavour still to maintain inviolate practices so diametrically opposed to the perpetuity or even present welfare of our Poultry Exhibitions," &c. The words in inverted commas are Mr. Hewitt's, one of our most experienced Poultry Judges, whose opportunities of obtaining accurate information on this subject are not surpassed by those of any other man in England.

They seem to point to judicial wickedness in high places, and if they have any meaning must refer, not merely to an isolated act of dishonesty here and there, but, I may almost say, to an organised system of roguery of surpassing infamy. Yet Mr. Hewitt contents himself with vague allusions, which fix neither disgrace nor responsibility on any one. Though an advocate for open accusations, he neither names the parties nor produces the proofs, and a fine opportunity is thrown away of showing us how such investigations ought to be conducted. Unfortunately, he only excites our curiosity, but withholds the gratification; we are brought to the verge of a judicial pandemonium, but he does not venture to roll away the sulphureous vapours which prevent our discerning the features of the delinquents.

If, then, Mr. Hewitt shrinks from the application of his own remedy, he can hardly be surprised if no one else has any confidence in it.—A NORTH COUNTRY AMATEUR.

EXETER POULTRY SHOW.

THIS Exhibition of Flowers and Poultry on the 26th of June was excellent. The weather was everything that could be desired. The flowers, amongst which was a very fine collection from Messrs. Veitch and Son's Nursery, Topsham Road, Exeter, were very fine; and in the poultry department every class was well represented, with the exception of the *Polands* and *Hamburgs*. The *Game* were so fine that the Judges commended the whole as a class. In the *Pigeon* department Mr. F. G. Stevens, of Wellington, was very successful. The class which was intended to include any distinct variety not particularised in the classes was called the "thorough-bred" class, a name open to many objections, and liable to induce many disputes.

JUDGES OF POULTRY.—Rev. J. Sydenham, Cullompton; Rev. H. K. Venn, Honiton; Stuckley Lucas, Esq., Dulverton; and Edmund Stamp, Esq., Honiton.

JUDGES OF PIGEONS.—S. Topping, Esq., Stoke Fleming, Dartmouth, and Mr. Piper, Exeter.

SPANISH.—First, J. K. Bartrum, Esq., Richmond Hill, Bath. Second, Mr. P. P. Cother, Salisbury. Third, B. J. Ford, Esq., Ide, near Exeter. Commended, J. R. Rodbard, Esq., Aldwick Court, Langford, near Bristol. *Chickens of 1857.*—First and Second, J. R. Rodbard, Esq., Aldwick Court, Langford, near Bristol.

DORKING (Coloured).—Medal, Mrs. J. Hole, Green End, Plymtree. Second, Mr. H. Drew, Peamore, near Exeter. Third, Miss J. Milward, Newton St. Loe, near Bath.

DORKING (White).—First, F. J. Coleridge, Esq., Ottery St. Mary. Second, G. Daw, Esq., Mount Radford, near Exeter.

DORKING CHICKENS OF 1857.—First, Mr. H. Drew, Peamore, near Exeter. Second, F. J. Coleridge, Esq., Ottery St. Mary. Pullets highly commended, Mrs. E. Towell, Escot, Ottery St. Mary.

CHINA (Cinnamon or Buffs).—Medal, J. K. Bartrum, Esq., Richmond Hill, near Bath. Second, G. Daw, Esq., Mount Radford, near Exeter. Third, Rev. G. F. Hodson, North Petherton, near Bridgewater. Hens highly commended, J. R. Rodbard, Esq., Aldwick Court, Langford, near Bristol.

CHINA (Brown or Partridge-coloured).—First and Second, Rev. G. F. Hodson, North Petherton, near Bridgewater. Third, B. J. Ford, Esq., Ide, near Exeter.

CHINA CHICKENS OF 1857.—First, J. R. Rodbard, Esq., Aldwick

Court, Langford, near Bristol. Second, G. Daw, Esq., Mount Radford, Exeter. Commended, Mr. C. Lightfoot, Magdalen Street, Exeter.

GAME (Black-breasted and other Reds).—Medal, J. R. Rodbard, Esq., Aldwick Court, Langford, near Bristol. Second and Third, Dr. Scott, St. Leonard, near Exeter. Highly Commended, Rev. G. S. Cruwys, Cruwys Morchard Court, Tiverton; Mr. H. Dunn, Broad Street, Southmolton; N. M. de Rothschild, Esq., Gunnersbury Park, Acton, Middlesex.

GAME (Duckwings, &c.).—Medal, W. Dawson, Esq., Selly Oak, near Birmingham. Second, J. R. Rodbard, Esq., Aldwick Court, Langford, near Bristol. Third, Miss Reynolds, King's Holm House, near Gloucester. Highly Commended, Rev. G. S. Cruwys, Cruwys Morchard Court, near Tiverton.

GAME CHICKENS OF 1857.—First, J. R. Rodbard, Esq., Aldwick Court, Langford, near Bristol. Second, Dr. Scott, St. Leonard, near Exeter. (The Game classes commended as a whole.)

MALAYS.—First and Third, C. Ballance, Esq., 5, Mount Terrace, Taunton. Second, Mrs. A. G. Brooke, Cumberland Street, Woodbridge, Suffolk.

GUINEA FOWLS.—First, Miss C. F. Macdonald, Lympstone. Second, Mrs. J. Hole, Green End, Plymtree.

HAMBURGHS (Golden-pencilled).—Second, G. S. Fox, Esq., The Court, Wellington. (First prize withheld.)

HAMBURGHS (Golden-spangled).—Second, G. S. Fox, Esq., The Court, Wellington. Cock highly commended, J. K. Bartrum, Esq., Richmond Hill, Bath. (First prize withheld.)

HAMBURGHS (Silver-pencilled).—Second, J. K. Bartrum, Esq., Richmond Hill, Bath. (First prize withheld.)

HAMBURGHS (Silver-spangled).—Second, J. K. Bartrum, Esq., Richmond Hill, Bath. (First prize withheld.)

POLANDS (Black with White Crests).—First, W. Dawson, Esq., Selly Oak, near Birmingham. Second, T. P. Edwards, Esq., Lyndhurst, Hants.

POLANDS (Golden).—Second, G. S. Fox, Esq., The Court, Wellington. (First prize withheld.)

POLANDS (Silver).—Second, W. Dawson, Esq., Selly Oak, near Buckingham. (First prize withheld.)

THOROUGH BRED.—First, J. K. Bartrum, Esq., Richmond Hill, Bath (Brahma Pootra). Second, Rev. G. S. Cruwys, Cruwys Morchard Court, near Tiverton (Black Brassy Game).

BANTAMS (Gold-laced).—First, Rev. G. S. Cruwys, Cruwys Morchard Court, near Tiverton. Second, Rev. G. F. Hodson, North Petherton, near Bridgewater.

BANTAMS (Silver-laced).—First, Rev. G. S. Cruwys, Cruwys Morchard Court, near Tiverton. Second, Rev. G. F. Hodson, North Petherton, near Bridgewater.

BANTAMS (any other variety).—First, F. G. Stevens, Esq., Hemyock, Wellington (Black). Second, Rev. G. S. Cruwys, Cruwys Morchard Court, near Tiverton (White).

TURKEYS.—Medal, J. R. Rodbard, Esq., Aldwick Court, Langford, near Bristol. Second, J. Adney, Esq., Cullompton. Third, Miss J. Millward, Newton St. Loe, near Bath.

DUCKS (Aylesbury).—Medal and Second, B. J. Ford, Esq., Ide, near Exeter.

DUCKS (Rouen).—First, C. Ballance, Esq., Taunton. Second, J. Marshall, Esq., Taunton.

PIGEONS.—Carriers.—Prize, F. G. Stevens, Esq., Hemyock, Wellington. Almond or Ermine Tumblers.—Prize, F. G. Stevens, Esq., Hemyock, Wellington. Fantails.—Prize, F. G. Stevens, Esq., Hemyock, Wellington. Jacobins.—Prize, Mr. W. L. Channing, Heavitree, near Exeter. Pouters.—Prize, F. G. Stevens, Esq., Hemyock, Wellington. Nuns.—Prize, F. G. Stevens, Esq., Hemyock, Wellington. Barbs.—Prize, F. G. Stevens, Esq., Hemyock, Wellington. Trumpeters.—Prize, F. G. Stevens, Esq., Hemyock, Wellington. Archangels.—Prize, F. G. Stevens, Esq., Hemyock, Wellington. Owls.—Prize, F. G. Stevens, Esq., Hemyock, Wellington. Turbits.—Prize, Captain H. Adney, Lympstone. Runts.—Prize, F. G. Stevens, Esq., Hemyock, Wellington.

EXTRA PIGEONS.—Extra prizes, Dr. Scott, St. Leonard, near Exeter (Bald-headed Tumblers); Mr. E. H. Burge, Taunton (Yellow Beards).

EXTRA STOCK.—Extra prize, Mr. G. Hill, 6, Regent Park, Heavitree (White Bantams).

HAMBURGHS IN VERY SMALL PENS.

As much has been said on the relative merits of Hamburgs and Cochins through the medium of your valuable paper, I think it a fact deserving the attention of the fancier and public in general that I have in my possession a Silver-pencilled pullet hatched the 9th of February last, which laid her first egg the 20th of this month. The most remarkable circumstance is this: the fowls are confined in a pen not exceeding three yards square, where they have been for two months past.

I keep the Golden-pencilled also. I have a cock and five hens in a similar pen. This spring they produced me on an

average twenty-six eggs per week. My pens are made thus: I board the bottom two feet high; above that wire or twine netting to the height of five feet six inches, covering the top with twine netting also. The roosting-houses are one yard and a half square, the same height as the pen, and thatched with straw roof and heath sides.

I keep my fowls very clean, water fresh and pure, food as varied as possible, not forgetting green meat daily.

Those individuals who cannot boast their acres of grass run may keep Hamburgs to advantage (profit I mean) in such inclosures. All the instructions they require they may glean from your valuable little "Poultry Book for the Many." I hope the "many" will avail themselves of it, and act upon its instructions.—E. SHARRATT, Rugeley, Staffordshire.

CLASS 6.—PIGEONS WITH LARGELY DEVELOPED TAILS.

VARIETY 2.—THE SWALLOW-TAILED PIGEON (*Columba hirundinina cauda*).

German.

DIE TAUBE MIT SCHWALBENSCHAWANZ.

BECHSTEIN, in his "Natural History of Germany," describes this variety as occasionally to be found among the collections of Pigeon fanciers, and says they are blue, chequered, or black mottled, the outer feathers of the tail being much prolonged, or forked like that of the chimney swallow, from which circumstance they derive their name. A Pigeon-fancying acquaintance informed me that he once had a pair of Swallow-tailed Baldheads, which he purchased in Manchester; so I conclude this variety is also to be met with in England, though I have not seen it.

Some of the wild Pigeons or Doves of foreign countries have long, wedge-shaped tails; but such a formation of tail I have never seen or heard of among our domestic Pigeons.—B. P. BRENT.

OUR LETTER BOX.

BUMBLE FEET IN DORKINGS (*J. F. N.*).—Have all your perches within two feet of the ground. Flying down from a height is the cause of it.

SPUR BROKEN OFF (*J. M. Bagg*).—This will not disqualify your bird.

BREEDING AGE OF GEESE (*Goose*).—Twelve months old is the age for Geese to breed, but they often breed at nine. Much depends on the manner of their bringing up in the way of food. We are not aware that there is any difference in the different sorts.

LONDON MARKETS.—JULY 6TH.

COVENT GARDEN.

A good supply and marked improvement in the trade. The usual consignments from the Continent and west of England reach us in excellent condition.

POULTRY.

The market is still well supplied, and the demand is above the average.

Large fowls.. 7s. 0d. to 7s. 6d. each.	Guinea Fowls 0s. 0d. to 0s. 0d. each.
Smaller do. 5s. 0d. to 6s. 0d. „	Pigeons 10d. to 11d. „
Chickens .. 3s. 0d. to 4s. 0d. „	Rabbits.... 1s. 5d. to 1s. 6d. „
Goslings 6s. to 6s. 6d. „	Wild ditto 7d. to 9d. „
Ducklings.. 3s. 0d. to 4s. 0d. „	Leverets.... 3s. 0d. to 5s. 0d. „

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—July 7, 1857.

WEEKLY CALENDAR.

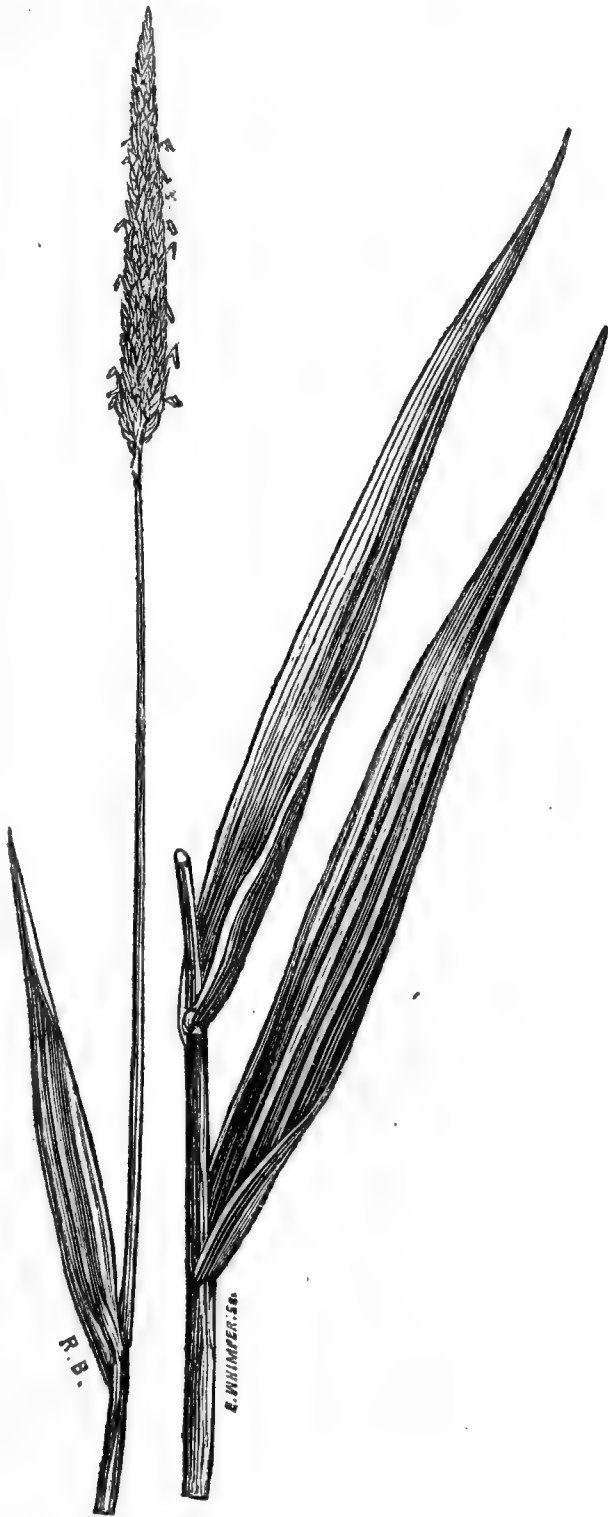
D M	D W	JULY 14—20, 1857.	WEATHER NEAR LONDON IN 1856.					Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.							
14	Tu	Touch-me-Not (<i>Impatiens</i>).	29.993—29.920	73—52	S.	—	1 a. 4	10 a. 8	11 a. 5	☾	5 31	195	
15	W	St. Swithin.	29.990—29.834	77—52	S.W.	11	2	9	11 22	24	5 37	196	
16	Th	Rupturewort (<i>Herniaria</i>).	29.992—29.737	68—43	S.W.	08	3	8	11 46	25	5 43	197	
17	F	Goosefoot (<i>Chenopodium</i>).	30.104—30.080	71—40	W.	—	5	7	morn.	26	5 48	198	
18	S	Oraches (<i>Atriplex</i>).	30.030—30.009	77—49	S.W.	01	6	6	0 19	27	5 53	199	
19	SUN	6 SUNDAY AFTER TRINITY.	30.005—29.979	76—61	W.	—	7	5	1 11	28	5 58	200	
20	M	Sea Eryngo (<i>Eryngium</i>).	29.997—29.941	71—57	N.W.	04	8	4	2 20	29	6 1	201	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 73.7°, and 51.3°, respectively. The greatest heat, 94°, occurred on the 17th, in 1834; and the lowest cold, 39°, on the 18th, in 1851. During the period 100 days were fine, and on 96 rain fell.

ORNAMENTAL GRASS.

ARUNDO DO'NAX VERSICOLOR.

(RIBBON GRASS.)



Root widely creeping, tough, thick, twisted, many-kneed, white, hairy. Stems hard, erect, hollow, three or four feet high, knots hard and wide apart, rough, and clothed with whitish down. Leaves about eight inches long, finely toothed at the edge, broad at the base, tapering gradually to a sharp point, marked lengthways with alternate stripes of pale yellow, or white, and milky green, varying in width, surface rough. Sheaths of leaves long and membranous. Flower-head a panicle, handsome, alternate-branched, dense, straw-coloured. Spikelets downy, three-floreted. Calyx three-awned, the

middle awn the longest. Valves of corolla lanceolate, blunt, fringed. Ovary smooth, notched at the end. Style cleft in two. Stigma brush-like. Seed two-horned. It belongs to Triandria Digynia class and order of the Linnæan System.

In England it is known by the various names of Ribbon Grass, Painted Grass, Indian Grass, and Ladies' Laces. In Scotland it is called Gardeners' Garters. The *Catalogus Hortus Kewensis* states that it was introduced in 1648; but this is a mistake, for Parkinson in his 'Garden of Pleasant Flowers,' published in 1629, says "it hath long ago been received into our English gardens." He describes it under the name of "*Gramen striatum*, Painted Grass, or Ladies' Laces," adding that Lobel says "it groweth naturally in the woods and hills of Savoy." "It is called by Lobel *Gramen sulcatum* or *striatum album*; of others *Gramen pictum*. The French call it *Aiguellettes d'armes*, of the fashion that their ensigns, pennons, or streamers used in war were of; that is, like unto a party-coloured curtain."

Gerarde, also, in his "Herbal," published in 1597, describes it under the name of *Gramen striatum*, accompanied by a good drawing. To the names already mentioned he adds these—Furrowed Grass, White Chameleon Grass, and Streaked Grass, "silver streaks running along through the midst of the leaves, fashioning the same like to laces or ribbons woven of white and green silk, very beautiful and fair to behold. It is kept in our English gardens rather for pleasure than virtue."

Caspar Bauhin, in his *Theatrum Botanicum*, published in 1658, observes that it was then cultivated in gardens in Germany, England, and Belgium from seed first brought out of Spain, and that in Germany it was called Spanish Grass.

FRUITS IN GENERAL, STOCKS, &c.

It will be readily conceded, I think, that there has not been an advance in the culture or character of our fruits during the last twenty years equal to that in flowers; in fact, they will not for a moment bear comparison. It is, therefore, a fair question why such should be the case. The first thing to inquire is, whether our fruits in general are not of as much importance to the country as our flowers. This will be a question somewhat difficult of settlement, and amounts, indeed, to a contest between two of our senses equally desirous of gratification, the eye and the palate—two keen competitors, each desirous of being gratified in its turn. If the house "were to divide" on

this subject I am almost inclined to think that Flora would carry the majority. Now, there is no fighting with tastes either individually or collectively, but surely we may be permitted to reason with them. It must be admitted that while Flora reigns in all her pride from May to October, and our splendid exhibitions are crowded with floral beauties and redolent of sweets, we are taken captive, as it were, with what may be termed dazzling beauty; but come the late autumn and dreary winter months, when our mass flowers look draggled and frost-bitten, and all thoughts are turned on wintering—a season of what may be called, perhaps, negative beauty—we very naturally turn our eyes to the fruit room, or to the late Grapes dangling triumphantly from the rafters of the vinery. From this period until April Pomona should certainly be allowed to show her importance.

As to fruits as a national affair they certainly hold a tolerably important position, whether imported or of home production. It is with the latter, however, chiefly that our present business lies; and here I would respectfully ask why it is that such a supineness exists as measured by the advance in flowers? The fact is, we want some establishment in this country devoted to progress in the fruit way; not merely how to preserve a *Ribston Pippin* from canker, but how to advance the character of fruits in general, both as to the raising of seedlings and the management of them as regards stocks. The latter will one day become a question for grave consideration, for it is indeed astonishing that we have plodded on with so little care in this matter for so many years. That many of our present stocks for grafting or budding are of very doubtful utility is confessed by most practical men; but how to remedy them is the question. It is evident that any real advance in this way must be the result of experiments, and that such to be conclusive must occupy considerable time; and herein, I suppose, lies the difficulty. It is tolerably plain that whilst the affair is left to private individuals the progress will be slow and uncertain. Surely an experimental fruit garden in connection with a Pomological Society would not be too much to expect in these advancing times.

I will here take a glance at the stocks of some of our fruits, and offer such opinions as may present themselves. Let us begin with the Apple, which is, perhaps, better suited in the stock way than many other fruits. The *Paradise* has long been used both in this country and on the Continent for a dwarfing and early-bearing system; but it is plain that some of our choice Apples are not well pleased with this stock. But then the "wearing-out" question comes in view, and an idea may naturally rise in the mind that possibly some other stock or mode might be discovered to avert this evil. It is tolerably certain, judging from facts, that all the compost-yard contains will not reclaim some of our fine old Apples; and if I be correct in this opinion their reclamation may not be sought for in composts, but rather in the mode of working and rearing the trees. Since it is found that the canker in Apples has the effect of accelerating bearing habits; that ringing, root pruning, and the use of delicate stocks have a similar tendency, it would appear that we should look for shoots with a somewhat contrary habit to avoid canker. I am decidedly of opinion that as much care should be exercised over the selection of pips for raising stocks as is used by our florists over some of their flowers. And what shall we say as to the selection of pips or Apple seeds for stocks, setting aside the idea of real Crabs or wildings for a moment? I am still of opinion that seedlings raised from our best bearing and constitutioned Apples would prove eminently serviceable in this respect; and here I would name such as the *Kerry Pippin*, the *Keswick Codling*, the *Wellington* or *Dumelow*, *Ross's Nonpareil*, *King of the Pippins*, &c.,

choosing them for their short-jointed, close spurring, and great bearing properties, as also for their sound constitution, and an avoidance of that roughness of bark which so much facilitates the devastations of the American blight. Now, it would be as easy to obtain stocks from these as by other means, and this I should call a step in the right direction.

Let me now pass on to Pears. Here I would urge a similar course of proceeding. It is quite probable that seedlings from the old *Swan's-egg* or *Moorfowl's-egg*, the *Louis Bonne of Jersey*, the *Beurré d'Amanlis*, and, above all, the *Beurré de Capiaumont*, and some others of similar habits, would possess desirable properties as stocks, and there would be another advantage in this course; it is not improbable that some very useful seedlings might be originated, independently of the idea of grafting or budding.

Let us now examine the Apricot question. This appears more difficult on the face of it. The stocks used for this delicate fruit, whether the *Muscle Plum* or the "commoner stock," which, whatever it may be, was used some forty years since, are constantly suspected by practical men to be not particularly adapted to Apricots, but that something more might be done for them. And here I may be permitted to name a favourite idea of mine long cherished, and which is that Apricot seeds or stones of wildings might be imported from their native climes, and might make excellent stocks. I really do not see any reason why such a plan might not be tried. The dying off of whole branches of the Apricot in this country we all are but too familiar with, and when once it commences it points to a premature breaking up of the constitution of the tree beyond all doubt. Now, this cannot be caused by the soil; the trees would not thrive so well whilst young if the soil did not agree with them. The evil must lay between the stock and the climate; but if the latter, why so partial in its operation? why one branch die and another beside it be in the highest luxuriance? These are puzzling affairs, and, whatever the cause be, there is room enough for jealousy as to the stocks. It would be a curious experiment to try what the Apricot would do on its own bottom or as a cutting. I daresay it has been tried, but I am not aware of having seen any record of it. I should like to try propagation from cuttings of the young growth, with the idea of coming as close to the seedling habit as possible. I should strongly suspect the cuttings from the old shoots of proving shy rooters. Indeed, I do not think the cultivation of fruit trees on their own bottoms or roots has ever yet had a fair trial. It is a pity but we could obtain the history of the origin and adoption of stocks by our ancestors; but I fear our oldest works on gardening can scarcely inform us. Perhaps old "John Rea, gentleman," in his "*Flora, Ceres, and Pomona*," has something that would throw light on the matter, or even older works. I once had Rea's work, but, being in my earlier teens, I thought it too old-fashioned, and sillily gave it away.

In trying experiments with stocks a few maxims, according to my opinion, should be kept steadily in view, and which I here offer, but not as aphorisms of an infallible character. I am well aware that the hands of the operator should not be tethered, or if they are it should be simply by some packthread sort of material. In the first place I should say, the closer the affinity the better. For my part I can see no sound reason to go so far from home for a stock for the Cherry as the *Mahaleb*, or to put Apples on the Mountain Ash or the Thorn. Whatever may be said in a scientific point of view about the stock exercising little influence on the scion, I feel persuaded that Nature does not prefer such extravagances unless it be in some of her mad frolics. To glance

for a moment at the animal world, I have heard, I think, of a lamb that had lost its dam being reared by one of the canine species, and such-like; but I fancy our great stock breeders would scarcely prefer such artificial mothers, even though the practice could be systematised with facility.

In pursuance, then, of a course suggested by such considerations, I should say, firstly, let the stock selected be of the same genus; secondly, let it possess as near an affinity in habit and appearance as possible; thirdly, let it be of free, but firm and sound growth, and having a capacity for producing abundance of fibres in almost any ordinary soil; and lastly, as to tender fruits, one that ripens its shoots well. Such a course I should recommend to any lady or gentleman who chooses to embark in this ingenious and interesting speculation—one, I am persuaded, which would be found to possess renewed interest at every move.

The raising and rearing of stocks, even up to their being grafted and budded, should not be conducted on soils much forced with manure. I should prefer what is called a maiden loam, in order that the natural habits of the kinds should be perfectly manifest; in other words, that the trial be impartial, and, I am almost inclined to add, severe.

I really confess to a belief that some of our ingenious amateurs will, before long, be induced to try their hand; in doing so I heartily wish them a full enjoyment of the pleasures it is capable of affording. Some of our Waltonian friends, who are notorious for that wondrous virtue, patience, are likely gentlemen to occupy an odd hour on days when they cannot fish in this kind of way. I much fear, however, that to carry out experiments of the kind in a manner equal to the just expectations of the age we live in will require a special arrangement, and a little of what is called the sinews of war.

R. ERRINGTON.

MEETING OF THE LONDON HORTICULTURAL SOCIETY.—JULY 7TH.

THERE was a full Meeting to-day without much crowding. Colonel Challoner was in the chair, in high spirits at the success of the new order of things. He said there was another very heavy list of candidates for admission into the Society, and he made a soldier-like defence of the new system of voting in new Fellows in the lump to spare the ladies' patience, with the laughing corner of his eye fixedly set in the direction of Mr. Godson, and carried the day on the short-run principle; so we voted in pretty nigh forty new members in one round of the ballot-box.

After that we had a Midsummer lecture on a large exhibition of fruit, some of which was "the finest that was ever seen in that room." The flowers were not so numerous, but were "highly interesting."

After the lecture another ballot took place to decide who should be the fortunate applicants for the new *Chamaecyparis* from Mexico, of which forty plants were raised in the garden of the Society from seeds gathered in Orizaba by M. Bortero, the last collector sent out by the old Council. There were 120 applications for the forty plants, and the ballot was on the ancient Roman principle. The names of all the applicants were written on separate slips of paper, which slips were folded and put into a glass canister. One of the ladies volunteered to draw the lots, and the Chairman handed each lot to Dr. Lindley, who read them to the Meeting. The first forty lots or names were the winners, and Mr. Pouty, of Plymouth, was No. 1; but three more nurserymen were "drawn"—Mr. Backhouse, of York; Mr. Chandler, of Vauxhall; and Mr. Fraser, of Lea Bridge. All these four will put on the steam to see which can

make the most of it for sale. Every joint of a *Chamaecyparis* will make a plant if grafted on a *Thuja* or *Cupressus*. Foreigners pronounce the name *Shamaecyparis*; but Dr. Lindley pronounces it *Kamecyparis*, with the accent on the *y*. I would undertake to go straight from London to Vera Cruz, and thence straight to Orizaba; I would scale the declivities of that monster peak from the east side up to the snow line, gather bagful of the seeds of this plant, be in London for the Christmas pudding, and in the market with seedling *Chamaecyparis*, which I could sell, after paying or making allowance for all my expenses, at one-half the price that the lucky winners must charge for it.

The last subject noticed from the Chair was certain alterations in the by-laws of the Society which were suggested by Mr. Godson, "a gentleman who has taken an earnest interest in our affairs." A new set of by-laws will be submitted to the next Meeting on the 13th of October. Meantime we shall enjoy the long vacation each in his or her own way; but first of all I must tell what was to be seen at the Meeting, and I shall begin with and follow the lecturer.

He first noticed a collection of fruit from Her Majesty, which eclipsed every former thing of the kind. There were two collections included in this, one of seven kinds of Cherries, and the other of four kinds of Plums and a seedling Strawberry. The Cherries were *Black Eagle*, *Werder's Early Black*, *Black Tartarian*, and *Knight's Early Black*, with *Downton*, *Elton*, and *Bigarreau*. The Plums were *Washington*, *Jefferson*, *Greengage*, and *Goliath*. Were it not for these Plums he told us that Mr. Blandy's gardener would have come in for the first prize, his *Jefferson* and *Victoria* Plums and his *Circassian* Cherries being very little behind the royal standard. The next grand collection was from the Marquis of Lansdown, and consisted of four *Queen* Pines between 4lbs. and 5lbs. each, and four *Providence* Pine Apples from 6lbs. to 7lbs. odd—all from eighteen-months'-old plants. When I was man cook it took the gardener just five years to fruit the *Providence*, and then we could never get them of the perfect form; and Mr. Spencer, who produced these, told me that to have really plump, good-looking *Providences* on the model of *Maids of Honour* they must be fruited at that age.

Next came an "arbour" of Grapes in pots, with an arched roof over the central table—two pots of *Black* Hamburgs from Mr. Ivison, gardener to the Duke of Northumberland at Sion. The lecturer referred particularly to the colour and number of bunches—fourteen on the two plants; but for a surer evidence of good gardening you must look first to the state of the leaves, and these were as green, fresh, and healthy as if the roots were in a border made by Mr. Errington himself. A dunce might fruit a Vine in a pot. If the plant was grown by a wise man he might then get large bunches and well-coloured berries; but "a poor tool" can never carry the leaves fresh to the table, and unless they are so the Grapes may be as black as sloes, but they must lack flavour.

From pot Grapes to Pines again, Mr. Davis, gardener to Lady Bridport, had two *Providences*, one of which was 7lbs. 2ozs., the other not quite so much. A *Queen* Pine, weighing 5lbs. 4ozs., from Mr. Browne, gardener to Mrs. Vivian, F.H.S., Singleton, Swansea, was particularly noticed for its size and beauty. Mr. Browne's ears must have tingled down in Wales when this was going on. Mr. Frost, gardener at Preston Hall, ditto, for his *Queen* of 4lbs. 8ozs.; and Mr. Maher, gardener to Sir R. W. Bulkely, Bart., Beaumaris, sent two *Queens* hard upon 4lbs. each.

Dishes and baskets of Grapes were particularly good, but all the *Muscats* were certainly not quite ripe. Mr. Hill, gardener to R. Sneyd, Esq., Keele Hall, sent the finest *Black* Hamburgs, with four leaves from the Vines

measuring from sixteen inches to nineteen inches and a half across! Mr. Spencer and Mr. Macqualter, gardener to Col. Challoner, were put on the same footing with Mr. Hill for their *Muscat* Grapes. Mr. Dunsford, Chingford, Essex, sent a beautiful basket of *Muscats*; and the delicious *Black Frontignan* was fine from Mr. Allport, gardener to — Ackroyd, Esq., Doddington. Mr. Shrimpton, gardener to A. J. Doxat, Esq., Putney Heath, sent a collection of Grapes, consisting of very fine-coloured *West's St. Peter's*, with *Hamburgs* and *Muscadines*.

Mr. Spencer sent a collection of Cherries, and there were several dishes of Cherries from other exhibitors.

The Peaches and Nectarines were very good; the best was a dish of six *Violette Hâtive* Peaches (not Nectarines), from Mr. Snow, gardener to Earl de Grey. Mr. Spencer, Mr. Errington, Mr. Macqualter, and Mr. Frost had the next best Peaches and best kinds—the *Royal George* and *Bellegarde*; but there were several other dishes of very good Peaches and Nectarines.

Melons were numerous and very good. The true old *Egyptian Green-flesh* Melon, from Mr. Spencer, was considered the best-flavoured, and is still, most certainly, the very best-flavoured Melon in England.

There was a dish of the *Sir Harry* Strawberry, from Mr. Yates, of Manchester, and trusses of the same kind to show how it comes in succession. These were spoiled by carriage, but the fruit was very large, and respecting its flavour we were told that two opposite opinions prevail among gardeners and others. Some say it is too acid, and some count it among the best of our Strawberries. The Horticultural Society consider it as good to eat as *Keen's Seedling*. Mr. Browne, gardener to Col. Bid-dulph, M.P., sent a Strawberry called *Stirling Castle*; but the Judges did not consider it worth much, nor the new seedling from the royal gardens.

There were models of flower and fruit gatherers very ingeniously contrived by Mr. Jones, of Constitution Row, Gray's Inn Road, who was there to show the working of the instruments; and I would advise Londoners to call on Mr. Jones and see his new contrivances, which are very useful in some cases, although we gardeners look on all such useful things as mere toys. It is but too true that some gardeners use cosmetics, and some put rings on their little fingers, and despise wooden shoes and flannel shirts, also as mere toys.

Mr. McEwen sent three dozen kinds of *Peas* in the straw from the garden of the Society, and ten kinds of *Dwarf Kidney Beans*, and placed them on the tables in the order of their ripening, and the earliest six or seven of the kinds ran thus—*Peas*: 1. Early Sebastopol, two feet high. 2. Eastling's Early Dwarf, one foot and a half. 3. Carter's Earliest, two feet. 4. Sangster's No. 1, three feet. 5. Emperor, three feet. 6. Early Nimble, one foot and a half. 7. Harrison's Glory, and so on to six-and-thirty. The *Kidney Beans* stood thus—1. Pale Dun. 2. Newington Wonder. 3. Liver Colour. 4. Long Pod Negro. 5. Early Six Weeks. 6. China Speckled. 7. Mohawk. 8. Fulmer's Glory. 9. Black Speckled; and 10. Red Speckled.

There was also a large contribution of plants from the garden of the Society, chiefly fine-leaved plants, two good specimens of *Achimenes Liepmanni* and *Mountfordii*, which is like the old scarlet one; *Diplacus glutinosus grandiflorus*, the straw-coloured kind, which is much admired in a mixed border out of doors in the Experimental; *Aphelandra squarrosa citrina*; a nice dwarf plant of *Conoclinium ianthinum*; and a very pretty specimen of *Pelargonium citriodorum album*, and others.

Messrs. Veitch sent a noble collection of *Aërides* and a new form of *Cypripedium barbatum*, which is very distinct; also a good example of their *Princess Royal*

hybrid *Rhododendron*. The *Aërides* were these—*Lar-pentæ, maculosum, affine*, very fine; two *Lindleyi, Lobbi, guttatum*, and a new kind in the way of *maculosum*.

Mr. Rucker sent a fine specimen of *Aërides nobile*, with long and many-branched flower-spikes. The lip, or labellum, in this kind is folded and turned up towards the column, with the spur below pointed out like the spur of a Larkspur.

Mr. Gains sent a large collection of pot Ferns, to which the lecturer advised the lovers of Ferns to look very particularly, as the kinds were very choice, very easy to grow, and probably very cheap. His next contribution was a most beautiful new *Geranium*; that is, not a florist's *Pelargonium*. It is as showy as a fine-looking woman at a ball. He made it himself, and, having come so near the mark, I will tell you how he did it as confidently as if I had seen him do it, and I shall be bound for it as true as his stud book can tell him. He took a healthy plant of *Dr. André*, a French sort, which "came out" at the Regent's Park in 1852 or 1853, I forget which; but the *Doctor* is registered in THE COTTAGE GARDENER for that summer. Well, he was then in love with the new French race, and seized on the best of the English kinds which came nearest to that race—I mean *Sanspareil*—and with the pollen of *Sanspareil* on the stigma of *Dr. André* this beautiful *Geranium* was made. It was not named.

Mr. Cutbush, of Highgate, sent a mossed boxful of his new variegated *Petunia*, which must look well in an edging to a bed on grass, or as a variegated bed by itself. The flowers are white, but the novelty and beauty lie in the variegated foliage.

Mr. Ingram, gardener to J. J. Blandy, Esq., sent a most beautiful *Hæmanthus*, the best grown and bloomed of the family I ever saw; but his name, *coccineus*, is not the right name, nor did the lecturer notice the error; but if it had been an Orchid it would have caught his eye in a moment. *Hæmanthus coccineus*, and five or six or more kinds related to it, always flower, like the *Belladonna*, before the leaves push. *Coccineus* produces only a pair, or at most two pairs of leaves in one year, and the leaves have no footstalks; they fall recumbent on the right and left of the bulb.

Mr. Blandy's plant is *Hæmanthus puniceus*, and belongs to a small section of the family of which Dr. Herbert thus remarks: "The most startling difference is that those of the first section flower with the leaves in vigour, instead of before their appearance." The leaves of the plant in question could not be more vigorous; they come in fours, so close together as to look column-like, from the stalks of the leaves appearing to unite; this part and the bottom of the scape are much bared. It is the finest of the race, and the best old plant in the country. Nurserymen should get and grow it once more for sale. The flower-heads are more like an *Ixora* than those of a bulb, and it keeps in bloom above two months.

But probably the most valuable plant in the room for the country at large was the new *Cupressus Lawsoniana*, three plants of which were exhibited by the Messrs. Waterer and Godfrey, Knap Hill, Woking, along with one of *Cupressus borealis*. *Lawsoniana* is unquestionably the most beautiful growing plant of that race at that age. It, or rather they, the three plants, looked at a distance as if they were specimens of *Acacia affinis* about a foot high, while *borealis*, of the same size, looked like a free seedling of the common upright Cypress of Italy or Italian gardens. The lecturer said that by some mistake *Lawsoni*, or *Lawsoniana*, was mixed up with some other kind, the name of which I did not catch, probably with *borealis*; if so, there are no two plants in that genus more unlike each other, and he, the lecturer, pledged his word that the plants before us were of the true species. I can vouch for the same

thing, for I have been watching the two at Mr. Jackson's nursery ever since he had them from Edinburgh true from the hands of the raiser. D. BEATON.

GLIMPSES AND GLEANINGS.

At the time I saw Mr. Cutbush's Nursery at Barnet I paid a running visit to several places in the vicinity. Having mislaid the few notes I took I will jot down some of the things that have left their traces on my memory.

WROTHAM PARK.

This is the well-known residence of the late George Byng, Esq., the father of the House of Commons, and now the property of Lord Enfield. It is delightfully situated about two miles from Barnet. The mansion used to be one of the most striking features on the great northern road from Barnet to St. Alban's in the days of coaching, and appears even to greater advantage from a distance than when in its immediate vicinity, the distance here, as in many other cases, lending enchantment to the view. Whether out of something akin to veneration for the worthy old politician, or from a desire for seclusion so natural to some minds, certain it is that the neighbouring gentry have so planted their mansions out of sight, that, standing at Wrotham, the beautiful landscape to the west and north, including several fine estates, might, without any stretch of imagination, be taken as part of the demesne, while from many parts of these estates the mansion of Wrotham becomes again the most conspicuous point in the landscape. The last time I visited this place, some ten or twelve years ago, an unpleasant but unavoidable work was then going on—underpinning and securing the foundations of the house, which had so much given way as to render the whole fabric insecure. The soil being of a very unsatisfactory character, the foundations had been laid on wood, but too near the surface, so that the air had access to it, and hastened its decomposition, and when that was gone the result was soon seen in the cracking of the walls and staircases. In these days of wide concrete foundations it may be less necessary to resort to wood on yielding, unsatisfactory ground; but, when resorted to at all, a first necessity is that it be placed deep enough to be beyond atmospheric influence.

In front of the mansion, and commanding a fine view of the lake and the adjoining scenery, a new terrace was nearly completed. This, however, is merely a tithe of the changes and improvements made by the present noble proprietor, as seen in beautiful, well-arranged, compact stables, new model farm buildings, elegant residences for farmers, gardeners, &c., and a fine new range of substantial and useful rooms and sheds behind the houses.

Accustomed to see first-rate gardening carried on here under the management of Mr. Thompson, when he had chiefly to depend upon the old-fashioned means of heating, and the range of houses was on the up-stair and down-stair principle, it was pleasant to see that a lady could now easily walk through on a good level path from one end of the range to the other. In many places, where in a range you have a greenhouse on one level, a vinery on another, and then a pinery, where you have to mount several steps, to walk along the back, and descend as many again to come to the level of the next house, a great improvement would be easily effected merely by taking a wide pathway all the way along the back, as has been done at Wrotham. A pleasant avenue is thus formed, and the gardening operations may be examined by any one; while, in the other case, none but strong,

healthy enthusiasts could be expected to undertake the task. The depth of Pine pits might form some excuse for such an arrangement formerly; but, as a shallow tank or hot-water pipes can now supply the place of a deep bed of fermenting material, such old-fashioned arrangements ought to be considered obsolete in all new erections.

The whole of this great range of houses is heated by a large powerful boiler, put up by the Messrs. Cubitt, the same firm, I believe, having also effected the changes and new works. A sight of the boiler shows it to be capable of doing far more work than is demanded of it. With commendable prudence, however, another of the same size is placed close beside it, ready to be worked if any accident should happen to the other—a mode which I recommended in the case of the large boiler of the Messrs. Weeks, and should always wish to be adopted where so much depends upon one boiler. The expense in such cases of a second boiler would be a small percentage for security, and would soon be more than paid in the saving of the heat, which would then escape from only one chimney instead of many, when in such large establishments a separate furnace is used for every house or two or three houses.

Though, owing to circumstances, Mr. Williamson, the gardener, could not go over the whole place with us, we were able to observe that a new Cucumber house heated by a tank had been erected in a new pit or frame-ground; that the whole of the Box edging in the kitchen garden was nearly fresh laid; that the forcing houses were showing well for fruit; that the huge vinery in the centre of the range, where the Vines are planted in the centre of the house, the stems supported by iron pillars until they reach near the glass, and then branching to the back and front, was in great luxuriance, though the size of the stems spoke of the Vines having seen many summers, and one of these stems seemed to be contending for the mastery with the iron column, clasping it so firmly as ultimately, I fear, to suffer from the embrace; that the conservatory was gay with Calceolarias, Cinerarias, &c., and grenadier-like lines of well-bloomed Hydrangeas by the sides of the paths; that the bedding stuff was in good order; the walks in the pleasure grounds and shady woods as pleasant as ever, with buddings here and there of incipient ferneries in shady places. Over these shady walks are, at places, wild rustic arches, over which the creepers dangled and flaunted as wildly; and the only feeling of a want of suitability impressed on my mind was on finding that some of these rustic arches had given way, and had been replaced by arches formed of green-painted iron and wire, which I could not help wishing might be concealed as soon as possible. Even then, however, years will elapse before the creepers and twiners conceal the formal outline of the iron arch, and thus compare favourably in such positions with the graceful wildness of their more rustic, unadorned neighbours.

Two other ideas may be worth mentioning. The first is, that when so much is done in the way of additions and improvements it would not unfrequently be desirable to fix upon a fresh site for a kitchen garden. Change and rotate in cropping as we may, a period will come when vegetables and fruits would rejoice in fresh soil. Just as in the remodelling and repairing of an old building, the expense is frequently as much as would have removed the old and constructed a new one, and then you have got the old building after all. Some people think a kitchen garden, with its wall trees, &c., can never be too old; but we constantly see in such cases how much plants relish fresh soil and other materials.

The other idea is taken from the *position* of the lodge at the chief entrance on the Barnet and Hatfield road. The kitchen garden is close to, but concealed

from, that road, and you turn off to it when near the lodge. For anything we know to the contrary, other positions might have been fixed upon for the entrance. The gates are so placed at a sudden turn of the road that, approaching them from Barnet, they seem to stand across, or at right angles with the highway. The idea imperceptibly glides upon you that the highway is merely an outside approach, separated by the gates from the more dressed and private grounds. A grandeur and dignity are thus given to the entrance merely from its position as approached from Barnet, but a dignity quite in keeping with the park scenery, the beauty of the grounds, and the massiveness of the mansion. Such an entrance and such a position would be almost as much out of place, in connection with a small cottage *ornée*, as a miserable hut and a dilapidated gateway would be, as we have sometimes found them, in connection with a stately castle or a palace mansion.

DYRHAM PARK,

The residence of Captain Trotter, is about two miles from Barnet, the chief entrance being at a little distance from the Barnet and St. Alban's road. Often and long before I had set foot within the demesne I had admired, in passing, the classic archway over the entrance, and peeps of the fine lake in the park. The mansion itself has more of the comfortable than the commanding or pretending in its appearance, and, though standing on an elevation, is concealed by trees until you are near upon it. From many points of the grounds fine views are obtained of the mansion at Wrotham. With other objects of attraction we will here confine our recollections to gardening matters, and as we have got to the house we will commence with the conservatory there, one end of which is in connection with the drawing-room, and separated from it by a glass doorway. I had often heard how well this conservatory was supplied with a succession of flowering plants, and with how little resources except those supplied by unwearied labour and unremitting attention. My expectations, though high, were anything but disappointed. Some of the modes adopted by the very able gardener, Mr. David Thompson, are so simple and effective that I think some of my recollections will be acceptable to many readers.

There is nothing particular in the conservatory or greenhouse itself except, perhaps, a circular glass roof, resting on an opaque brick wall on the north side, and on an upright glass front on the south side, that south side consisting of doors or windows, each of which, or every alternate one, opened inwards on hinges. The west end was a brick wall, and rather an eyesore in the position when looked at from the outside. A covering of foliage, or even a glass end, would be much better; but beyond that to the westward a space is left about the same size as the present conservatory, and very probably, when the worthy proprietor pulls down the west end of the present house, it will be for doubling its size.

With the exception, so far as I recollect, of a small, narrow stage against the back wall, on which a bank of flowering plants was placed, there was nothing in the way of a stage or table for setting the bulk of the plants upon. Only remove the plants, and you have the floor as bare as that of a well-swept barn. The practice first adopted at Regent's Park, and so far carried out in the late Show at Chiswick, of enabling spectators to look down on fine flowering plants instead of looking up at them, and seeing only a portion of their outline instead of the whole, has long been adopted in this conservatory by Mr. Thompson. Though on my visit on the 16th of May there was not a plant but might with satisfaction be investigated singly, yet the object of the arrangement was to present the finest effect to a person standing or sitting in the drawing-room, and, with the exception

of those on the narrow back stage, having the whole mass of bloom under the eye; and except a few starers here and there, so as to supply light and shade, the great mass of bloom was nearly on one level.

This result is very simply attained by raising the plants to the requisite height by different sizes of garden pots; and though the plants are placed thick enough to mass, and thin enough to show their individuality, while they harmonise and contrast, and on the whole presented an airy, rather than a dense, compact appearance, I looked over them several times before I discovered a garden pot placed beneath them, so neatly had the whole affair been managed.

Lest I should forget I may mention here that in the case of many plants, and more particularly the *Pelargoniums*, Mr. Thompson attaches great importance to the plants not standing on a damp medium, which often clogs up the drainage and injures the foliage by the miasmatical vapour that frequently rises about them, especially when the house is shut up. My own experience and observation have led me to believe with Mr. Thompson that such a standing medium, combined with the least degree of over-watering, is a fruitful source of spot and apparently scalded leaves on *Geraniums*, even when the sun's extra shining was guarded against.

The fine display of bloom consisted chiefly of *Azaleas*, such as *variegata*, *Perryana*, *Duke of Devonshire*, and *Criterion*; of early-flowering *Pelargoniums* that force well, as *Alexander the Great*, *Boule de Feu*, *Gauntlet*, *Bianca*, *alba multiflora*—*Blanchefleur*, however, being considered the best with a light ground by Mr. Thompson, and advertised, I think, by Mr. Parker; fancy *Pelargoniums*, such as *Vidette*, some four feet in diameter, and from two feet to two feet and a half in height, without stake, brace, or ligature; *Calceolarias* chiefly with yellow, purple, and crimson flowers; and *Cinerarias*, such as *compactum*, with blue, *Crimson Superb*, with crimson and white, and others with blue and white flowers.

In other compartments in the kitchen garden I noticed beautiful spotted *Calceolarias*, &c.; but plants with such a mixture of colours were rarely taken to the conservatory. I perceived that when viewed from the doorway of the drawing-room, unless very near, they produced no effect comparable to those that had clear and distinct colours, and the distinctness not the least hazed when standing at the farthest end. I also noticed that the bolder and distincter the colour the farther, in general, was it removed from the eye. I found, also, that not only here, but in the preparatory departments, garden pots were freely used to place a pot plant in the identical position, as respects nearness to the glass, that the operator wished. Before alluding to these other departments there are one or two things worth noting connected with the conservatory.

First, *shading*, though close to the mansion, was not effected in any expensive way with fine blinds and rollers, but the glass was painted over with a solution of lime and milk, the latter causing the other to adhere, but not so firmly but that it would wash off in the autumn. This no doubt answered remarkably well, though for such a position I should have preferred strong size water, with a little turpentine in it, and just enough of whiting to colour it a little, and when laid on with one brush to be daubed quickly with the points of a dry one, when it would resemble ground glass. This mixture should be put on hot, and when the glass is dry and the sun shining. The milk and the lime were, however, a new idea to me, and very likely the milk would neutralise the tendency in lime, if at all quick, to injure the paint and putty—a tendency which leads me to use whiting and chalk instead when such a process is necessary.

The second was the precaution in giving front air. I have mentioned that the windows or doors opened inwards for their whole length, so that when you gave air at the top you could not help giving it at the bottom. Mr. Thompson wished for air *over* and about his plants, but not to come rushing in underneath them, and therefore against all the openings he had boards set about three feet and a half high to prevent the air rushing in at the bottom. Of course the same thing could have been effected if the doors or windows had been made in two pieces, but the good workman will always make the most of his means without complaining that he can do nothing before such and such things are done for him and changes effected. I mention this the more because the free use of front air, especially at an early period, is often productive of much injury to tender plants of all kinds.

In front of the mansion and the conservatory is a small flower garden, the beds of which are mostly large, and which no doubt are planted so as individually to produce a fine effect, and I am certain from this point of view yield great satisfaction. A very little labour under Mr. Thompson's guidance would not only secure this satisfaction in beholding each individual bed, but there would also be the additional pleasure in seeing these individual beds so grouped that each, though beautiful in itself, would have that beauty enhanced from forming a part of a harmonious whole. I have great sympathy with those feelings and associations of a proprietor that render him unwilling to change in the least even the form or curve of flower-beds. I also know that to a gardener who has, or thinks he has, a taste for grouping and effect, there will be an additional zest felt for his work when he fills beds either of his own making, or that otherwise secure his approbation. A sort of compromise is very good on such occasions, for then the proprietor may have more justice done to the heirloom family associations of a garden, and the gardener with his new group may console himself in thinking he is marching with the times.

The whole of the preparatories for the flower garden and this conservatory, which I have made the starting point of a rambling gossip, as well as the forcing houses and pits, are situated in the kitchen garden, at some distance from the mansion. I have mentioned what chiefly rendered the conservatory gay in May. I saw lots of fine plants of Pelargoniums destined to succeed them. The old florist kinds were supported with sticks, but not over much so. Many huge plants of fancies had no stick or ligature of any kind. The largest of these were rising three and four years old, and the oldest would be thrown away when the flowering was over. Beautiful compact plants were coming on to succeed these larger fancies, and were then little more than a twelvemonth from the cutting. Mr. Thompson strikes the cuttings of such plants in a little heat in spring, keeps growing them on in summer, and in a twelvemonth they are nice stubby plants for blooming or making large specimens. The different varieties of Crassula were also largely and successfully cultivated. To obtain a yellow for such groups he has a sort of branching, twiggy, yellow Prince's Feather sort of Cockscomb, which, from its gracefulness, must produce a fine effect, though enough, when looked upon as a Cockscomb, to give a real florist a fit of the blues. Talking of Prince's Feather reminds me that this old-fashioned plant and Amaranths of all kinds are also grown for this purpose. Then there were pots of Balsams, Cockscombs proper, and Achimenes of all varieties, &c., to come in in their place along with Fuchsias of all colours. Fuchsias, Lilies of the *punctatum rubrum* kind, Ferns, and plants with fine foliage form generally the last autumn dis-

play before the winter plants are introduced. There is nothing peculiarly fitted in these houses for growing such quantities of plants; the forethought and attention of the superintendent, it is at once seen, are the elements that make them suitable for a destined purpose. Having lately described several houses and pits, I will refrain from drawing upon my recollection in this respect, and will conclude by noticing a few matters at random.

1. Vines are grown pretty extensively in pots, and with fair success. Nevertheless, where a house is to be appropriated to Vines, I still retain the opinion expressed in a recent number. Mr. Thompson seems to be much of the same opinion, for he has planted a house or two in the usual way, though containing many plants in pots at present. His mode of planting is worthy of attention, and, in similar cases, of imitation. He has got two plants to a rafter instead of one. One of these he means to allow to bear as much as it will and as early as it will, and when exhausted to be removed. The other he proposes cutting down in the winter pruning, and taking only a little fruit from it for two or three years in the usual recognised manner.

2. The kitchen garden is placed in a dell or valley, and is therefore subject to hoar frosts, which are frequently very injurious in the spring, destroying not only fruit but early vegetables. What is very singular, however, is, that at the bottom of a west wall Lettuces have stood uninjured for many winters, so much so that there are generally plenty to part with every spring to other gardens, which, in respect to almost everything but these Lettuces, pass through the winter without sustaining anything like the amount of injury in other respects. What can be the reason that in such circumstances Lettuces thrive so well?

3. When I first knew the garden it was next to unworkable from being so stiff and tenacious. By a process of burning the clay and manuring it seems now to be fertile and easily worked. Many of the walks are bordered with large flints, and they look neat, and furnish little harbour for slugs and vermin.

4. The north wall of the garden is not high, say seven or eight feet, but from earth behind and other causes, independently of piers, it hangs over past the perpendicular like the Tower of Pisa; at least a considerable length of it does, so much so that a stone dropped from the top fell fully two feet beyond its base. Against this wall Peach trees were flourishing, and what I want to record is this—that, however fruit trees fail elsewhere, there is never a failure of Peaches on this wall, even though they receive no protection.

5. Mr. Thompson has had *frigi domo* three years, using it for protection in winter, and a thick shade when necessary in summer, and likes it. It seemed little the worse for wear. He also uses hexagon netting or Nottingham lace for keeping out flies and bees from his Geraniums and Fuchsias. I also observed tiffany used by Mr. Cutbush for shading, and he spoke highly of it.

6. If anything very particular has escaped my memory I trust to Mr. Thompson to supply the omission. I must say I left the place not merely gratified with the neatness, order, and forethought everywhere apparent, but with many fresh and interesting fields of inquiry suggested.

R. FISH.

KITCHEN-GARDEN WORK FOR JULY.

LET us suppose a garden of ordinary dimensions, in which vegetables of all the common kinds are wanted, and crops coming on and going off in the usual course of things. For instance, Potatoes have been dug daily for the use of the family, and the ground accordingly cleared of that crop. Let such ground be immediately got ready for another one. If for Broccoli or any crop of that kind a good coat of manure and digging will prepare it for planting when the first rain

comes, as it is likely the plants will be large enough then. If *Turnips* are wanted a plain digging without dung will do for those for use at table, provided the ground be tolerably good, and the seed, being sown in showery weather, is quickly up, while the digging and preparing are better done when dry. Ground from which winter Onions have been removed may be dug and prepared for *Celery*, which may be quickly planted when the proper time comes, *i.e.*, when it rains. *Peas* that have been sown wide, with a view to have Broccoli planted between them, may have the line of the intended row of plants broken up in dry weather, to be ready to plant when it is wet. Crops of Cauliflower that have been cut, *Lettuces* that have been used or run to seed, or, in fact, any crop whatever that is no longer useful, ought not to remain a single day in the ground, but be removed, and the latter got ready for something else; for, be it remembered, there are few jobs but which are better done in dry weather than when wet, except planting, and now and then sowing seeds; but if the preparation of the ground be left until showery weather it is very likely the best of that weather may be gone ere it is half got ready. It ought, therefore, to be an imperative rule in a kitchen garden to remove every useless crop immediately it becomes so, and prepare the ground for the next; for, independently of the exhausting influence a runaway crop of Lettuce or Spinach has on garden ground, a corresponding benefit accrues to it on being roughly turned up to the sun and air; and though it is advisable at all times to make the ground fine at planting or sowing time, there is no particular reason for making the surface of it so at the time of digging. Rough ground, after lying awhile exposed to the sun, usually gets into a mellow condition, and is more easily broken at top when wanted; besides, being rough, the sun and air can penetrate it deeper, and there are no roots for their influence to injure. A good turf-beater is an excellent thing for small plots when a roller cannot be got to work, and seeds and plants seem to luxuriate all the better for the soil they have to grow in being previously well scorched by a Midsummer sun; and it is needless to say that the appearance of ground got ready for another crop is at all times more pleasing than when it is lying in a careless way, exhausting itself by Radish, Cauliflower, Lettuce, and other crops running to seed. Weeds, we presume, there are none, but they are not a whit more exhaustive than the articles enumerated; and, as it often happens that periods of dry weather are followed by only a short allowance of rain, it behoves all to be prepared to make the most that can be made of it; for if there even be strength sufficient to prepare every inch for cropping during the continuance of the moisture the object is not so well performed, for all seeds and plants like to have the soil they grow in exposed to the sun some time ere they enjoy it. This rule holds good in nothing more forcibly than in *Celery*, which forms an important crop in the autumn and winter, and the bulk of it ought to be planted this month.

As more particulars will follow on the treatment necessary for each crop to be sown or planted now the above is merely intended as a preparatory measure to insure the ground being in readiness; for though in early spring the delay of a week or more may not make much difference, at this time it is important not to lose a day, for vegetation is at that point of advancement that any means taken to hasten or retard its progress has more influence than at any other time, and the benefit or otherwise of activity or delay will be felt at a future day.

BEANS, BROAD.—To the cottager the *Hangdown* and *White Windsor* are the best, the latter for flavour, and the former for hardihood and good bearing; but the middle or end of June is as late as it is prudent to plant either variety except for the table of the epicure. Thus little can be done now except nipping off the tips of those in flower to promote their setting, unless in certain cases wherein the process of setting and bearing is purposely wished to be detained, when the tips may be allowed to grow on, and the bottom florets picked off. A stiff, loamy soil suits Beans best, but they will do on light lands, provided there be at least eighteen inches of good soil available for them to root in.

BEANS, DWARF KIDNEY.—The varieties of this useful legume are, perhaps, better described by the names given than those of any other vegetable. *Speckled Dun*, *White*

Cream, and *Liver-coloured*, all convey some knowledge of the character of the seed. The end of June is as late as it is prudent to plant out of doors in a general way. A rich garden soil not too light suits them best, and their bearing qualities may be much improved by careful and continuous picking. The *White Canterbury* is as good as any for the cottager, but the *Liver-coloured* is equally good on cool-bottomed soils.

BEANS, SCARLET RUNNER.—It is needless saying anything in commendation of these, as the cottager is so well acquainted with them. Picking closely, and, if the weather be hot and dry in September, watering freely with liquid manure, will prolong their bearing; but a good soil, plenty of room, and an open situation are essential points to success. The *Painted Lady* and *White Runner* are both inferior to the *Scarlet Runner* for general use. They may be planted until the middle of June, or even later; but the last is cut off by the first frost the same as the earlier ones, and is not a whit better with regard to bearing at that time.

BEEF, RED.—This requires but little attention at this time, thinning being the principal, and that need not be done to excess. Ground too rich is at variance with good colour, and dung near the surface, as well as very rough occasions forking.

BRUSSELS SPROUTS.—These are, perhaps, the most useful of all the Cabbageworts, and certainly continue in season longer than any one individual variety, not even excepting the Cabbage. Sow imported seed as early in the spring as possible, or in very late situations they may be sown in the August and September preceding. Plant out on good ground, and they require little more attention. Two feet and a half apart is not too much on good ground, but two feet will do on ordinary soils. Earth up at the proper time, and they require nothing further than removing the weeds that may grow. An application of manure water will increase their growth, particularly in August and September, when they are more especially in active growth.

BROCCOLI.—This is a versatile class, and often attended with unpleasant disappointments. Some growers insist on the possibility of having good heads of Broccoli all the year round from the Walcheren alone; but I would not advise any one to depend on that solely, though it may be planted to a greater extent than most others. I plant largely of a *Purple Cape Sprouting*, *Knight's Protecting*, one or two kinds of local celebrity for very late work, and *Snow's Winter*, as it is better not to depend on one kind alone, as seasons alter the expected time of their coming into use. A very rich soil will grow them best, but is not so well for their standing the winter. In many cases Broccoli are planted after the first crop of Potatoes, or between rows of Peas. In the latter case much of its growth must of necessity be postponed until the autumn, but it is very accommodating. At the present time planting out late plantations and earthing up earlier ones is all that can be done. A little seed of *Early Cape* might be sown at the same time as the Cauliflowers to stand the winter, but it is equally as tender.

CABBAGE.—This is certainly the most profitable vegetable grown, and generally esteemed. Sow in late situations the 1st of August, or a week before that. In more favoured places the 12th will be soon enough. Something also depends on the quality of the variety, as some of the most improved kinds have less tendency to run to seed than others, and consequently may be sown and planted out earlier. Those expected to stand all the summer had better not be sown before the middle of August. Those for early crops might be sown much sooner, and being planted on some warm border, might be removed after cutting in spring. A good rich soil, rather stiff than light, suits this crop best, and lime may be freely administered, as well as a manure, as a destroyer of insect life.

CARROT.—This is frequently a precarious crop, and seedmen are, perhaps, oftener found fault with for failures in this than most other things. The fact is the plant comes up with such small seed leaves, which, being sweet, are great favourites with slugs and other enemies, that the crop is devoured by them before it is visible to us. A good liming before sowing will be found useful. Sow in April. The *Early Horn* is the best for table, but keeps badly. The field Carrot, or *Orange*, is better for that purpose. Thin liberally and in time, and if the soil be a suitable one the

result will be satisfactory. A light, sandy soil of a good depth is the most suitable.

CAULIFLOWER.—The best early kind is the one mostly used. Sow in late situations under glass about the 20th of August, or to the 1st of September. In more favoured places the latter period will do without protection. Plant out this crop in handglasses, frames, and other sheltered places, and give air at all favourable times. Another crop may be sown early in spring on some hotbed or other warm place, and succession crops until the end of May, or up to the middle of June in some places. A rich soil is the most suitable for all except the crop standing the winter, which, like other things, is hardier by not being over-fed. A late variety, called *Asculle*, is grown for summer and autumn use, but is no better than the *Early* when the latter is good.

CELERY.—The proportion which most gardens present in autumn as under this crop is often as much as one-eighth or even one-sixth of the whole area. Being a favourite with every one it is not to be wondered at that it is extensively grown. Sow in some slight hotbed early in March, and prick out the plants on some enriched bed or border, to stand awhile before they are finally planted in the places where they are intended to perfect their growth. Single trenches not too deep are best for producing quality; but a good broad trench, say six feet, with rows across, will prove of service in furnishing a large quantity of tolerably good Celery. Liberal waterings of liquid manure when the plant is growing will be serviceable, and at all times the plant likes moisture. *Cole's* and *Seymour's White* and a good red are all that are wanted. Let the situation be open, and, if the weather be very hot and dry, begin earthing up betimes. If, on the contrary, it be showery, let the plants arrive at a good size first. Let the latest rows intended to stand the winter be blanched with coal ashes being put against the plants instead of the earth, and in very severe weather a covering of litter will be of great service in protecting them; but in a general way worms and slugs are more destructive than frost, and must be guarded against as above. July is the best month to plant the main crop, but it may be later or earlier as wanted.

ENDIVE.—This useful winter and spring salad may be sown at various times from the beginning of June until the end of July—the *Green and White Curled* for autumn and winter, and *Batavian* for spring use. A good rich soil is indispensable; and, as the plant during the process of blanching is covered up, it does not take so much harm as it otherwise would do from the succulent nature it presents when grown on rich ground. Plant about eighteen inches apart each way, and blanch by covering each plant with a flower-pot with the hole stopped up, or a pan will be equally suitable. Before severe weather sets in take up a quantity with large balls of earth adhering, and plant them thickly in some dry, open shed, where they can be protected from frost, and where the blanching process can be carried on at the same time as described above.

LETTUCE.—Sow various kinds, and at various times and places, more especially in dry, hot weather. In a general way the Cabbage varieties resist seeding better than the Cos. A rich soil, planting out when young, and liberal applications of soft water, with now and then liquid manure, will generally insure success. The best kinds to stand the winter are the small green Cabbage kinds, of which the *Hammersmith Hardy* is the best. *Brown Dutch* is also useful that way, and the other kinds more or less useful.

LEEK.—Sow in early spring, and when large blanched stalks are wanted plant out in trenches the same as for Celery; but in a general way they are preferred green, in which case either planting out thinly or effecting the same object by thinning must be attended to.

ONION.—Deep cultivation, plentiful rains in June, and early thinning are the principal points that secure a good crop of Onions. Sow as early as the ground can well be meddled with, thin as soon as they will bear handling, and keep the ground stirred as long as it can be done without injury to the plants. The *Reading* and *White Spanish* are most grown, but the *Globe* is, perhaps, the most useful. For standing the winter the *Tripoli* is best, and the *Silver-skinned* is best for pickling. Most things grow well after Onions, and the crop being gathered tolerably early in average seasons, another may advantageously be planted.

Onions deserve one of the best situations in all gardens, and generally are a favourite crop with the cottager.

PARSLEY.—Little need be said of this, unless it be to advise a second sowing to be made about the end of June, or, in case that should be impracticable, to plant out some then that was sown in May, and at the end of August to cut most of the leaves off. This secures a crop of fresh ones before winter; but a late sowing is also useful, as not being so likely to run to seed in the ensuing spring.

PARSNIP.—This requires little comment, and at the present time no particular treatment; keeping clean from weeds, and otherwise removing any that may have a tendency to run to seed, is all that is wanted, thinning being done long ago.

PEA.—Few crops may be sown at a greater diversity of seasons than Peas, as with the exception of September I have known them successfully sown in all the other months; but the beginning of August is as late as they can be sown for use that year, and it rarely happens they do any good after sowing at the end of June. The middle of November is also as early as it is prudent to sow to stand the winter, but from that time to the end of June successive sowings may be put in. The *Emperor* and *Sangster's No. 1* are the best early kinds I have tried, and the *Champion* and *British Queen* the best for a general crop, the latter kinds being sown from February up to the beginning of June, after which I sow early kinds again. Cool, deep, cultivated ground suits Peas best for summer; but a warm, dry border is best for their standing the winter. Mildew is the greatest drawback to them in summer, against which there seems no remedy; but it may be kept in check by adopting means to insure a healthy growth, as watering with liquid manure, sowing thinly, and perhaps a dusting with sulphur may be useful, but I confess being sceptical on the latter point.

RADISH.—On hot, dry soils it is useless sowing this except in spring and autumn; but on these occasions, perhaps, a light soil is best. If tried in summer let the Radish be sown behind a wall facing the north, and if damp so much the better. Quick growth is also essential to crispness.

SAVOY AND KALE.—The same remarks hold good here as in Brussels Sprouts.

SPINACH.—Sow at various times up to the end of June, which will carry on the supply to autumn, and the crop to stand the winter may be sown at the end of August. The *Prickly-seeded* is best for winter, the *Round-seeded* for summer. Thin both crops, and let the winter one have a dry, warm border. The Round-seeded is often sown between rows of Peas for summer use.

TOMATOES.—Sow in a hotbed in March, pot off, and finally plant out early in May against vacant places on walls, &c. If the plants become too gross stop them in July, and thin them at the same time. If they continue to throw out laterals instead of fruit, cut the roots by thrusting in a spade all round at the space of eighteen inches or so from the stem.

TURNIPS.—Gardens seldom produce good Turnips; the ground is generally too rich for them. Stiff, clayey ground is said to produce the best flavoured; but for the early crop a good south border must be prepared. Sow the *Snowball*, *Early Stone*, and *American Stone* for all the crops, and thin in time.

SWEET HERBS.—Most of these being permanent perennial plants require no further comment here than a notice to propagate all the kinds in proper time, as they all want renewing, and they must not always be depended on for growing on the same ground again. Sage, Winter Savory, Hyssop, and Horehound ought to be propagated by cuttings put in during moist weather in June. Many other things are increased by parting the root, as Mint, Fennel, Pennyroyal, &c., which ought to be done in April. Others, again, are reared every year from seed, as Summer Savory, Sweet Marjoram, Basil, and Chervil. All these plants, with many others, are wanted at various times, and the skilful cultivator, by putting in cuttings or seeds at the proper time, secures a succession with much less trouble than is generally supposed.

Many other things might be added to the above; but enough is said to enable the cottager or the inexperienced to know what is most necessary to do at the present time. Other information bearing on the season will be forthcoming at the proper time.

J. ROBSON.

IMPLEMENTS AND OTHER CONSTRUCTIONS SUITED FOR GARDENS.

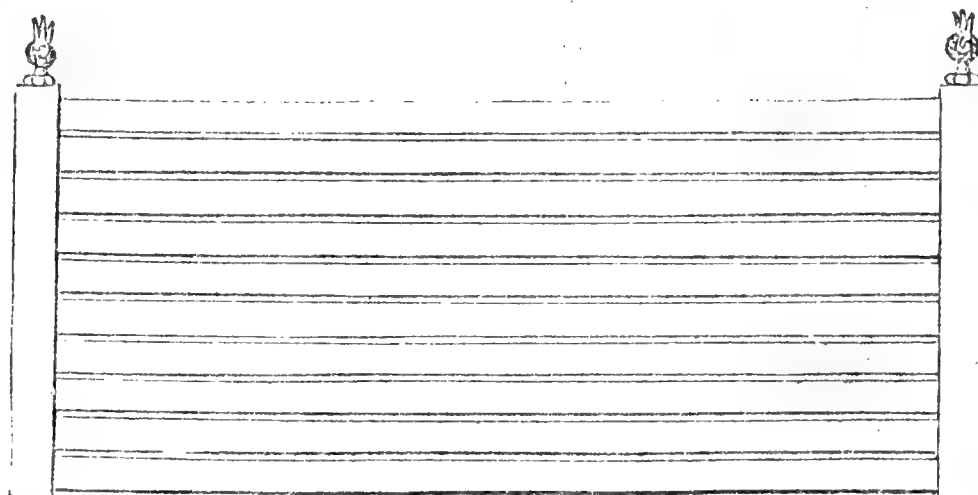
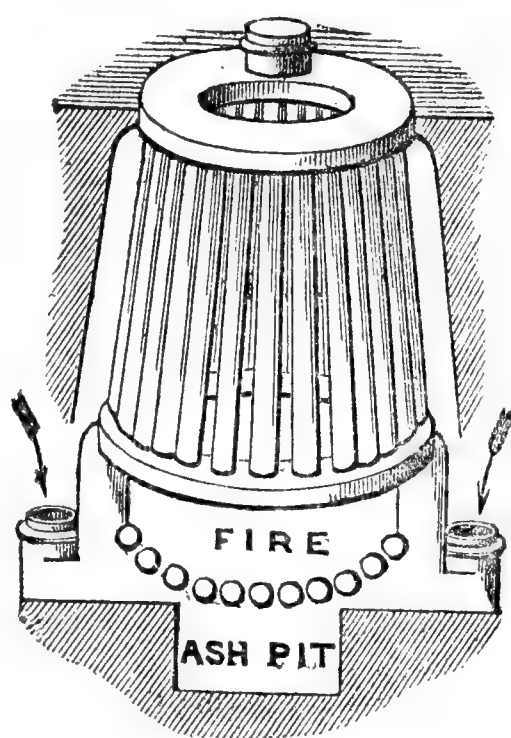
EXHIBITED AT THE HORTICULTURAL SOCIETY'S SHOW AT CHISWICK.

(Continued from page 189.)

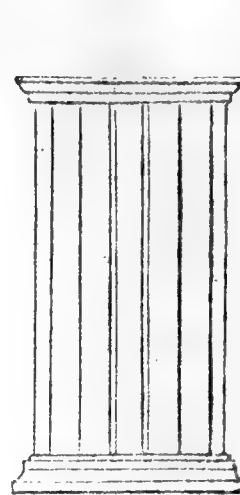
BOILER AND HOT-WATER APPARATUS EXHIBITED BY MESSRS. WEEKS & Co., KING'S ROAD, CHELSEA.—These upright tubular Boilers are very powerful, durable, and economical. The furnace-bars are hollow tubes, through which the return water passes before entering the upper

part of the boiler, thereby causing a very rapid circulation, and producing double the effect from the same quantity of fuel.

The object of the whole is to expose the largest surface for heating to the action of the fire.

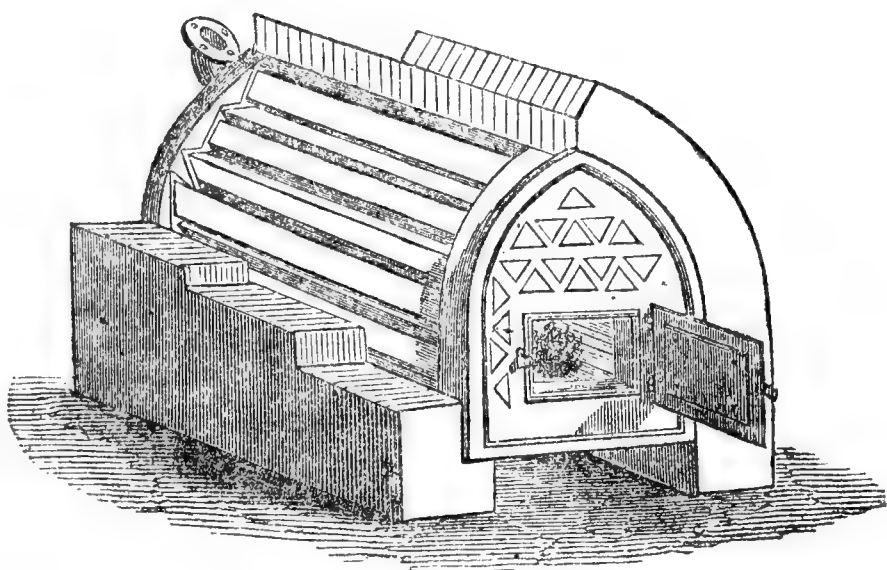


ORNAMENTAL STACKS OF PIPES made of various sizes, suitable for Warming Dwelling-houses, Halls, Churches, Offices, &c. Any number can be fixed side by side, or to form a square, exposing a very large heating surface in a very small space.



ORNAMENTAL PEDESTAL OF PIPES, made of various sizes, particularly adapted for Warming Entrance Halls, Conservatories, &c.

PATENT TRIANGULAR TUBULAR BOILER, BY MR. T. G. MESSENGER, LOUGHBOROUGH.—In this Boiler the immense surface exposed to the direct heat of the fire is obvious, and

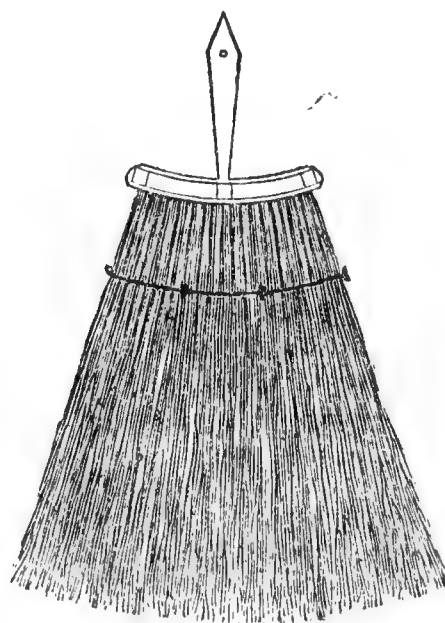
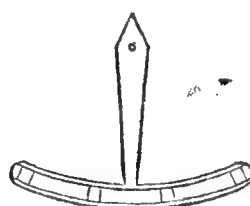


by the arrangement of parallel triangular tubes no particle of heat can escape without first doing threefold the work it would in any other manner of construction. The horizontal position of the tubes and the triangular shape cause the heat in its upward current to rebound from tube to tube, so that before it can reach the flue the chief of the heat is expended in the boiler. The rapid circulation of the water, which is the groundwork of the principle, caused by the action and reaction of the fire, is considerable. Should the boiler at any time require cleaning, it can be done by removing the ends, which are made in separate parts. The fire-bars form water-spaces; consequently they cannot be injured by the action of the fire, and the bars themselves become a working part of the heating apparatus.

BROOMHEADS, PATENTED BY MR. W. HENDERSON, GARDENER TO THE DUKE OF ATHOL, DUNKELD.—These Broomheads are iron frames, into which twigs of Birch, Heath, Broom, or other shrubs may be firmly fixed by means of

nuts and screws, for turning which a wrench is supplied with each, and each head has a socket, like that of a garden rake, by which it is fastened permanently to a handle. The fan or flat ones (Nos. 1 and 2), for sweeping short grass from lawns, answer well. We have not tried the large round-headed one.

Nos. 1 and 2. Fan Broomheads, filled with Birch and Palm fibre, for sweeping lawns, carriage-drives, &c.

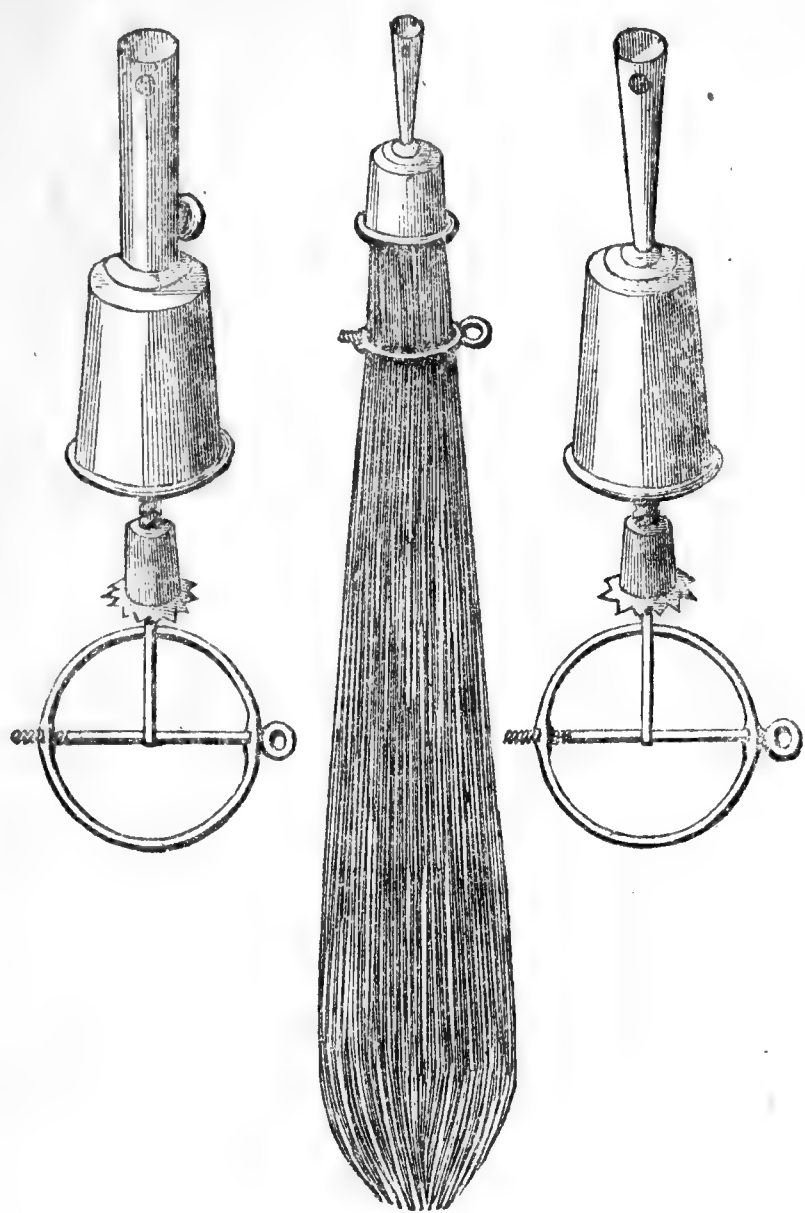


No. 1.



No. 2.

No. 3. Round-head Broom, filled with Birch and Heath, for stables and common use.



No. 3.
(To be continued.)

"THE LILIES OF THE FIELD."

THE most remarkable contribution that has been sent to the Experimental Garden is what is said to be the "Lily of the field" referred to by our Saviour in the sermon on the Mount. It has just flowered in a neighbouring garden, and turns out to be *Lilium candidum*, the white Lily of our gardens, which the unlearned in botany, from Dublin to Damascus, believe to be the true Lily of Scripture; but botanists in all parts of Europe reject that opinion, because the Holy Land has been botanised over and over again, from Dan to Beersheba, without a white Lily being met with in a wild state. All the researches of science have hitherto failed in finding in the Old World a native country for the white Lily, and were it not that a figure of it growing in a vase appears in an engraving of the Annunciation, by Martin Schongauer, about the year 1480, or a dozen years previous to Columbus's first voyage, botanists in Europe would assign the New World as the only native place of the *Lilium candidum*, Mr. Pentland having found it growing wild in Cusco, in the highlands of Peru, and Mr. Skinner met with it in Guatemala, also in the wild state.

It is a native of Syria, however, and it is as likely as not that the Spaniards introduced it to America, where, in the lapse of time, it might escape from cultivation and appear as a native plant. The worst weed in the market gardens from Richmond to Mortlake is *Galinsogea parviflora*, a Mexican plant which escaped from Kew, and, without knowing its history, a botanist might take it for a native of Surrey. Mr. Kinghorn's new nursery on the Sheen road out of Richmond was perfectly covered with this Mexican weed when he took

possession. There are hundreds of such instances on record from all parts of the world. That the white Lily is a native of the Old World is proved by the engraving aforesaid, and that it grows wild, "and covers the steep sides of the valleys, and fills the air with its fragrance" on the north slopes of the Lebanon range, we have the testimony of one of the most remarkable men in all Syria, a Maronite M.D. with a diploma from London, where he studied not long since. He was a visitor at the Experimental, and is well known to many readers of THE COTTAGE GARDENER hereabouts, and the following biographical sketch of him, as the discoverer of the native place of the white Lily, is well worthy of insertion in such a work as this:—

Abdallah Asmar, native of Mount Lebanon, left his country in 1841 to gain European knowledge, and after several years' residence in England, pursuing the study of medicine at St. George's hospital, he returned to live among his country people, the Maronites of the Lebanon, it always having been his object to practise his healing art among those poor mountaineers, who never had before the blessing of a resident doctor in their district, hundreds dying every year from the mere want of bleeding, or losing their eyesight for lack of the simplest remedies. On Abdallah's first arrival in his native village of Zook-el-kharab (three hours' journey from Beyrout), he was an object of intense curiosity and some suspicion. There was no end of the speculations both as to the quantity of European gold in his trunk and magic lore in his head. The Maronite ladies came to petition him to write them charms, which they were sure would bring under their control the source of some true love that did not run smooth; the sick would not trouble themselves to describe their symptoms—they must be already known to the great Anglo-Syrian physician. The notion of a doctor's fee in the Lebanon did not quite accord with Abdallah's newly-acquired English practice; it was the patient who expected to receive it for the favour he did his medical adviser in swallowing his medicines, and only in case of a decided cure was payment thought necessary at all: even then the poor mountaineer was often reduced to say, "I pay you my thanks." Abdallah has returned to his native land a firm Protestant, and therefore neither patriarch, nor bishop, nor the richer inhabitants would allow the heretic hand to touch their pulse, be they in ever so great extremity. Many a tempting offer has he had of patronage and emolument if he will but return to the bosom of the Roman Catholic Church. The patriarch has even promised to build him a hospital; but he remains firm to his Protestant principles, and therefore lives on in his poverty.

Abdallah Asmar seems to have been possessed with a thirst for knowledge from the age of eight years. He relates how as a boy he used to be taken down to Beyrout by his father, and how he stared with wonder at the Franks bustling along the streets in their tight-fitting clothes, and would ask him how they came to be sewn on them, and if they never took them off; but, however grotesque the outward man appeared to him, he felt sure those turbanless heads contained vast knowledge, and he longed to visit their wonderful country, where alone he could find it. This desire grew with his growth and strengthened with his strength, and he never rested till he accomplished it. After finishing his education at the Maronite college of Ain Warkha in the Lebanon, he was sent at the age of seventeen, as one of the most eligible of the students, to superintend the college of the same order at Aleppo. He lived for ten years in the house of the patriarch in that city, at the end of which time he fell in with the American missionary, Mr. Bedell, and, after some conversation with him, consented to assist in the secret distribution of the Bible in Aleppo. To Mr. Bedell he opened his heart, and expressed the earnest desire he felt to drink at the fount of knowledge in more enlightened lands. He was not only encouraged in this idea by the earnest missionary, but assisted by funds sufficient to help him as far as Nice on his way. There he found, by letters of recommendation, other kind friends who sent him on to London.

It was on a foggy day in the month of February, the snow deep on the ground, that the Maronite of the Libanus found himself threading the streets of our metropolis in

his native costume, knowing besides his own Arabic only a few words of Italian, and little else in his pocket but a letter of introduction to a clergyman of one of our most populous London parishes. By a fortunate circumstance he came to be received into the house of a gentleman in the neighbourhood of Kingston, where his pleasing and intelligent manners, excellent conduct, together with his country and cause, gained him many friends, and by their means he was enabled to prosecute his medical studies at St. George's hospital, the medical gentlemen there kindly giving him free admission to all their lectures. From them he received the highest testimonials, both as to the manner in which he had pursued his studies, and more especially the great progress he had made in anatomy. In 1849 he returned to his native land with his diploma in his pocket, and a great deal more science in his head than he had ever dreamt of before he left it. He writes constantly to his friends, and in a letter lately received gives the following account of his labours:—" Oftentimes, when I am going along the road, people issue to see me from their villages, and stop me on the road and tell me their complaints, and I give them my advice while sitting on my horse, and patients whose houses are close by roads entreat me to shift a little the way, and dismount to see them; and mothers carrying their infants in their arms meet me on the way. I never refuse any, but whether in the scorching heat of summer, or cold and rains of winter, I stop to listen to them and relieve them." In writing of the aspect of the country Abdallah says: "I do see a variety of wild flowers adorning our fields; the gardener is Nature, and how well she rears them!" He praises especially the beauty of the *Lilium candidum*, which he says covers the steep sides of the valleys and fills the air with its fragrance.

We have thus gained one point only of a subject which occupied the botanical mind of Europe from the first dawn of scientific botany, but it settles nothing about the Lily of Scripture. That Lily must have been, and is to this day, a common plant all the way from the banks of the river Kishon, at the back of Carmel, to those of the Jordan, where it enters the Lake of Tiberias, the Sea of Galilee. The congregation on the Mount being principally the dwellers in that portion of the Holy Land, "Behold the Lily of the field" would have been as familiar to them as the Daisy or Buttercup would be to an English ear. Not so, however, if that Lily was only to be seen in the country of the Maronites, which is far away from Nazareth, and over a range of mountains. When Joshua divided the land of Canaan to the tribes of Israel the country of the Maronites fell to the "lot" of Asher, and in the days of Solomon it was from this very place that he had the Cedar trees from King Hiram to build the temple; and all that remain of the Cedars of Lebanon, which furnished such beautiful imagery to David and Solomon and other sacred writers, are situated not many miles above where Abdallah gathered those white Lilies which are now in the Experimental. Lord Palmerston had his fingers in a hot pie there not many years back, and M. Thiers will never forgive the dashing way Lord Palmerston settled that dispute, without France getting as much as a piece of the crust; and later still a friend of mine, after seeing Damascus and the ruins of Balbeck, came round through the countries of the Druses and Maronites to have a sight of the old Cedars, from which he brought me cones. He, too, was looking for the white Lily, but saw none, although he visited every place of note in the Holy Land.

Now, would you not suppose that any one visiting the Holy Land would go a little out of the way to see these celebrated trees, as my friend, a courier, did? There is no doubt but scores of people went to the very spot since the time of the Crusades, and in going up to them or coming down from them they must have passed through the native places of the white Lily, and yet we have not a single syllable on record about any one having ever seen it there. This may be taken as presumptive evi-

dence in favour of the white Lily being a native of Galilee at least, and the actual Lily referred to in the sermon on the Mount after all; for if they could not see it on the north of the range, where it certainly does grow wild, how could they find it in Galilee, which is at the foot of the southern slope, so to speak?

About fifteen or sixteen years since Dr., now Sir John, Bowring was in Syria, and saw the "fields" and by-ways about Nazareth, Galilee, and on to the Jordan in a blaze during April with the Byzantine Lily of old authors, *Lilium Chalcedonicum* of modern botany; but he, too, failed to see a single white Lily growing wild in all Syria. From his account of the scarlet Lily being a common plant in the Holy Land, botanists have taken it for granted that *Lilium Chalcedonicum*, which is of the Martagon section, must have been the Lily of the Scripture. It strikes me that Abdallah will be able to clear up the point; he promised to send us the red Lily of Syria also. We shall send him this number of THE COTTAGE GARDENER to see the fix we are in; and if the two Lilies do not bloom about the same time there, or if there is a friend between him and Samaria who knows the white Lily to grow wild anywhere about Galilee, he will be able to tell us.

D. BEATON.

THE CINERARIA.

THE Cineraria is now quite out of bloom, and, of course, will be set out of doors, perhaps behind some hedge or wall, utterly uncared for except obtaining now and then a regular sluicing of water. Wherever this slovenly method is practised it is not only wrong but ungrateful. The plants have done their best to please their cultivator, and should have some return in the shape of attention. To say no more on that head, the question is, What do the Cineraria plants require now? In the first place, it should be determined at once what varieties are not worth keeping, and that being resolved, let them be thrown to the rubbish heap forthwith, and the pots washed and put away in their place. Then, in the second place, let all such as are intended to be kept be planted out in a bed in the open garden, the pots treated like the others. When this is all done there will be fewer unsightly objects, and less care in watering required. Those plants so put out in the border will soon put forth side-shoots. As soon as these have the least bit of root to each divide them carefully off the old plant, put them in small pots, and place them under glass, a frame being the best, shading them from the sun. In a fortnight they will have made fresh roots, and may then have more light and air. To make good plants they will now require frequent repottings in rich soil. The best compost I know for these plants is composed of turfy loam three parts, and one part two-year-old cowdung, liberally mixed with river sand. In this, if duly watered, frequently repotted, and kept clear of green fly by often filling the frame with tobacco smoke, by September the plants will have broad, healthy leaves, and the roots will have filled eight-inch pots completely. After that they must be kept as cool as possible short of actual frost. I have always found them more healthy in a well-protected frame or pit through the winter than in the best greenhouse.

Seedlings will or ought now to be ready to pot off. Here the open air treatment is by far the best. Prepare a bed for them by adding to the soil some well-decomposed dung and sand, raising it a little above the level of the rest of the ground; choose a damp, cloudy day, and prick out in this prepared bed the seedling Cinerarias, planting them in rows five inches apart, and three inches from plant to plant in the rows; water them immediately very gently, and give them a

sprinkling every night and every morning, unless, of course, it should prove a rainy season. I am much mistaken if the amateur who takes my advice on these points of pricking out his seedlings and keeping them moist will not be rather astonished at the rapid, kindly growth of the plants. Such a stock of health and vigour will be attained by them that they will retain strength and health through the winter. The only points to attend to will be great care in taking them up before they become too large, and to be careful to take them up with nice compact balls. A common hollowed-out garden trowel is the best instrument for this purpose. When potted they will require a week or two's placing under a frame, and to be shaded, to recover the transplanting.

Those cultivators who may not have a convenient bed to prick out their seedlings, or who may choose to keep them under glass, may proceed by filling some shallow boxes or garden pans with the compost, and in them prick out the young seedlings, as soon as they can be handled, at about two inches apart, and when the leaves begin to touch each other have them transplanted into suitable-sized pots, replaced in the frame, shaded, watered, fumigated, and so forth as they require it, and repotting them when the pots are filled with roots. By this treatment the plants will flourish pretty well, but not so fast or freely as in the open bed.

SIX NEW VARIETIES OF CINERARIAS.

1. *Brilliant* (Lidgard).—White ground, with light azure blue edge, and very dark disk or centre. A variety possessing excellent properties of form and habit.

2. *Earl of Clarendon* (Turner).—Deep violet ground, with a red ring round the dark disk. A very distinct and superior variety, novel in colour, and excellent habit.

3. *Emperor of the French* (Turner).—White ground, with broad, rosy crimson margin, and dark disk. A large-flowered and well-formed flat truss. A fine exhibition variety.

4. *Excelsior* (Turner).—Clear pearl white ground, margined with violet; disk violet also. A lovely variety in the way of *Sievwright's Scottish Chieftain*, but much improved every way.

5. *Miss Labouchere* (Boussie).—White ground, with a narrowish margin of rosy lilac. A fine variety.

6. *Optima* (Boussie).—White ground, with a broad, deep blue edge, and disk of the same colour. Whoever exhibits Cinerarias for a prize ought to procure this variety.

(Price from 3s. 6d. to 7s. 6d. each.)

It is probable by this time, or early in the autumn, that young plants of these six varieties may be obtained for half the prices quoted. It is something remarkable that new varieties of Cinerarias are scarce this season, or perhaps the raisers have prudently refrained from sending out any varieties as new ones that are not superior to those already known and cultivated.

TWELVE OLDER VARIETIES.

1. *Alba Magna* (Smith).—White self, with purple disk. A fine variety.

2. *Conspicua* (Wheeler).—Pure white ground, broadly margined with rosy purple; habit dwarf and compact, with large, well-formed trusses.

3. *Empress* (Salter).—White ground, with a delicate rosy lilac edge; petal broad, and habit good.

4. *Exquisite* (Dobson).—Pure white ground, margined with rosy crimson, dark disk, a good shape, and free bloomer, with a dwarf habit. Fit for the exhibition stage either at a show or at home.

5. *Fascination* (Henderson).—A clear, deep blue self, excepting a distinct white circle round the blue disk; petals well formed and very firm.

6. *Lady Mary Labouchere* (Turner).—Pure white ground, delicately margined with blue; blue disk. A free bloomer of a dwarf, neat habit.

7. *Magnum Bonum* (Turner).—A bright rosy purple self, with a white ring surrounding the nearly black disk. A noble, fine variety.

8. *Mrs. Gerard Leigh* (Henderson).—Pearly white ground, with a margin of rosy purple, and blue disk. A large, distinct, and showy variety.

9. *Picturata* (Henderson).—Clear white ground, margined with rosy purple; lavender disk. A good show variety.

10. *Prince of Blues* (Ivery).—Very dark blue self, contrasted well with a white disk. Large and showy.

11. *Rose of England* (Boussie).—Clear white ground, margined with violet purple; dark disk, and extra fine form.

12. *Sir Charles Napier* (Turner).—Rich blue self, with broad petals and dark disk. A fine show flower.

T. APPLEBY.

THE CRUCIFERÆ, OR CROSS FLOWERS.

From Hogg's *Natural History of the Vegetable Kingdom*.

(Continued from page 185.)

"**CAMELINEÆ.**—*Camelina sativa*, or *Gold of Pleasure*, is extensively cultivated on the Continent, particularly in France, Germany, and Belgium, for the oil which is expressed from its seeds; and in some parts it is an important crop in agricultural cultivation. The oil of *Camelina* is nearly inodorous, and gives a brighter flame, with less smoke, than that of either Rape or Mustard. It is considered the least in value of all the oils of this family, but is good for scouring cloths, and—in winter only—for making a soft soap. It is not drying, neither is it considered applicable for domestic purposes. The stems of this plant are tough, fibrous, hard, and durable, and are used as a thatching for temporary buildings, and for making brooms, sackcloth, sailcloth, and packing-paper.

"**LEPIDINEÆ.**—In this tribe we have *Lepidium sativum*, the *Common Garden Cress*, of which there are several varieties, including the *curled-leaved* and the *broad-leaved*. The whole plant has a warm, slightly acrid, and pungent taste, but is mild and agreeable, and is well known as furnishing, with Mustard, one of the most common and popular salads. The leaves and the roots of *L. latifolium* have an acrid and peppery flavour, and, applied to the skin, speedily produce irritation. The whole plant is of energetic action, and is one of the most powerful antiscorbutics. The leaves having been used by country-people as a condiment to their viands, instead of pepper, it has been called *Poor Man's Pepper*. Other species, as *L. ruderale* and *L. Iberis*, possess the same properties.

"**ISATIDÆ.**—The most important plant in this tribe is the *Dyer's Woad* (*Isatis tinctoria*), from which a blue dye is obtained, with which the ancient Britons painted their persons, and in consequence of which the northern inhabitants of our island were called by the Romans, Picts, while those of the south were styled by the Celts, Britons, from the Celtic word *britho*, to paint. In Celtic it is called *glas*, signifying blue, and from this the name of Glastonbury is supposed to have arisen. As an article of commerce Woad is now of much less value than it formerly was, when it formed a very important feature in English agriculture, its place having been supplied by indigo, which can be produced in much greater quantity and at a considerably cheaper rate. Woad is a native of this country, and is still cultivated to a small extent, affording two crops in the year. It is not our province here to enter into the cultivation of the plant, but as regards its blue product we shall shortly state the mode by which it is obtained. When the plant is ripe, which is known by its first leaves beginning to dry, all the leaves are cut off and laid in a heap to wither, in a place sheltered from the sun and rain, and are frequently turned over to make them heat equally. When properly fermented they are taken to a mill, similar to that used for crushing linseed, and there ground till reduced to a paste, which is afterwards

formed into cakes of about a pound weight, and these are laid to dry in a covered place sheltered from sun and rain. In about a fortnight this paste has acquired sufficient consistence to be formed into small roundish lumps by means of little wooden moulds. As fast as they are moulded they are laid on wicker hurdles to dry, and when they have become hard they are in a condition for market. The dye obtained from Woad makes an excellent blue, and very lasting; but when it is used in the present day it is always in union with indigo, which adds considerably to the improvement of the colour. The leaves of Woad have a fleeting pungent odour, and an acrid durable taste, and have been used in scorbutic affections, jaundice, and other complaints.

(To be continued.)

WHY ARE NEW PLANTS NOT EXHIBITED?

I HAVE attended all the floral exhibitions in London this season, and I have been somewhat disappointed, as in former years.

You may think me singular or difficult to please. Be that as it may, I will state in what I have been disappointed; you will then be kind enough to say plainly if my expectations were reasonable or not.

Notwithstanding the fine groups of stove and greenhouse plants, with the huge *Erica Cavendishii*, the *Ixora coccinea* of great beauty, and many other such fine plants of the *olden* time, still I have not seen those fine plants of recent introduction produced in collections that I have much desired to look upon, such as—

Allamanda Aubletii,	Gompholobium venustum,
Portlandia platantha,	Eriostemon pulchellum,
Thunbergia laurifolia,	„ amœnum,
Thyracanthus rutilans,	Gastrolobium Drummondii,
Acacia Drummondii,	„ Hendersonii,
„ grandis,	„ Leekianum,
„ longiflora,	Hibbertia Reedii,
„ magnifica,	Impatiens Jerdonia,
„ cynorum,	Bouvardia longiflora,
Bejaria æstuans,	Leptodactylon Californicum,
Boronia Drummondii,	Luxemburgia ciliosa,
Burtonia pulchella,	Oxylobium Osbornii,
Chironia glutinosa,	Rhododendron Javanicum,
Cytisus filipes,	„ jasminiflorum,
Desfontainia spinosa,	Æschynanthus splendidus,
Dillwynia cinnabarina,	&c.

Would it not be a little more pleasing in these go-ahead days to see something a *leetle* more novel? Now, we are asked after a show, What have you seen in the way of new things? Nothing; no, nothing! Yes, there was one fine plant. Mr. G. Dods, from Cooper's Hill, sent a fine *Leschenaultia biloba major*, though nothing else but what we have seen before over and over again, and that, too, though not so fine. Now, Sir, am I reasonable? If so, please prescribe a remedy, and you will very much oblige—A DEVONIAN.

[The remedy is obvious. Societies make no distinction in their prizes for collections. If they gave a £20 prize for a collection of plants introduced to this country not more than five years we should see new plants in greater abundance at our shows. At present gardeners can win with plants named in the first edition of the *Hortus Kewensis*, so there is no pecuniary inducement to buy newer and more expensive kinds.—ED. C. G.]

BEEES, DAHLIAS, AND SHADING HIVES.

WE agree with Mr. Laxton that Dahlias are not noxious to bees, in opposition to the strong assertion of "SENOJ," at page 119. We noticed this erroneous idea some years back, and observed that Dahlias, like most other double flowers, afford but little attraction to bees; and who now-a-days grows single ones? Indeed, we do not think that Dahlias contain any noxious qualities whatever. We need hardly mention that earwigs are very fond of their leaves and young shoots, but perhaps some are not aware that wasps are also fond of

the juice which happens to ooze out from the cracks in their stems; even hornets sometimes peel these, and suck the juice or eat the inner rind.

We cannot conceive how such a notion originated as that of "SENOJ," except that it arose from benumbed droves of wild bees taking shelter in Dahlia blossoms, which did not sufficiently shelter them from the cold as the season drew to a close. But the same may be found among Thistles and the tops of yellow Ragwort; yet whoever heard of such being noxious except as bad weeds to be rooted out of the ground?

This correspondent's belief is strengthened by having seen a paragraph in a newspaper, stating that Dahlias are injurious to bees; but surely he does not believe all that he reads in such productions. We have known both thrive together since our childhood, even when half-double Dahlias were trained against a wall, and looked upon with surprise.

While the pen is in our hand we may observe that the thermometer stands at 88° in the shade, a north aspect, at half-past twelve o'clock, this being the hottest day we have had this season; consequently, bee-hives should be shaded to keep off the hot sun, otherwise the combs may melt or collapse. We have known several cases of such mishaps during less heat than that of the present day, 27th of June. —J. WIGHTON.

HARDY PLANTS IN FLOWER AT SOUTH-AMPTON.—JUNE 26TH, 1857.

Aconitum napellus, 3 feet, purple.
Aster alpina, 4 inches, lilac and white.
Armeria latifolia, 2 feet, pink.
Asphodelus luteus, 3 feet, yellow.
Agrostemma coronaria, 2 feet, white and red.
„ flos Jovis, 2 feet, pink.
Anchusa Italica, 2 feet, blue.
Anemone palmata, 1 foot, yellow.
Campanula medium, 2 feet, blue and white.
„ persicifolia, 3 feet, blue and white.
„ albo-pleno, 3 feet, white.
„ cœrulea-pleno, 3 feet, blue.
„ pumila, 4 inches, blue and white.
„ macrantha, 2 feet, violet.
„ nitida, 6 inches, blue.
„ trachelium flore-pleno, 2 feet, blue and white.
„ latifolia, 4 feet, blue and white.
„ speciosa, 2 feet, blue.
„ Carpatia, 6 inches, blue.
„ Garganica, 4 inches, blue.
Calliprora alba, 2 feet, white.
Crucianella stylosa, 1 foot, pink.
Czackia liliastrum, 1 foot, white.
Catananche cœrulea, 2 feet, blue.
Delphinium Barlowii, 3 feet, blue.
„ grandiflorum, 3 feet, purple.
„ „ pleno, 3 feet, purple.
„ pictum, 4 feet, purple and white.
„ azureum, 4 feet, blue.
Dianthus superbus, 2 feet, lilac.
„ cœsius, 3 inches, pink.
„ barbatus, 1 foot, various.
„ hybridus, 1 foot, various.
Erodium, 1 foot, pink.
Euphorbia cyparissias, 1 foot, yellow.
Eryngium maritimum, 3 feet, light blue.
Erigeron Philadelphicum, 3 feet, blue.
Fumaria formosa, 1 foot, rose.
Geranium sanguineum, 6 inches, red.
„ Ibericum, 2 feet, blue.
„ macrorrhizum, 1 foot, red.
„ pratense, 2 feet, blue.
„ phœum, 2 feet, dark.
„ striatum, 1 foot, pink and white.
Gillenia trifoliata, 2 feet, pink and white.
Hemerocallis flava, 3 feet, yellow.
„ aurantia, 1 foot, orange.
Hyacinthus monstrosus, 9 inches, blue.
Hesperis matronalis, 2 feet, white.
Iris Florentina, 1 foot, blue.

Iris Germanica, 3 feet, pale blue.
 „ sambucina, 2 feet, light blue.
 „ versicolor, 1 foot, various.
 „ graminea, 1 foot, lilac.
 „ fulva, 2 feet, orange and brown.
 Inula glandulosa, 2 feet, orange.
 Lychnis Chalcedonica, 3 feet, scarlet.
 „ „ flore-pleno-albo, 2 feet, white.
 „ „ „ rubro, 2 feet, red.
 „ coronata, 1 foot, orange.
 „ Sieboldi, 1 foot, white.
 „ fulgens, 1 foot, scarlet.
 „ flos-cuculi-pleno, 2 feet, pink.
 Lilium martagon, 3 feet, white.
 „ „ „ scarlet.
 „ „ „ purple.
 „ „ „ yellow.
 Lathyrus tuberosus, 3 feet, pink.
 Lysimachia nummularia, 3 inches, trailing, yellow.
 Lactuca sonchifolia, 1 foot, lavender.
 Lygeum Spartum, 2 feet, white.
 Myosotis Azorica, 2 feet, sky blue.
 Orobus lathyroides, 2 feet, lilac.
 Ornithogalum latifolium, 2 feet, white.
 „ „ pyramidale, 2 feet, white.
 Enothera taraxacifolia, 1 foot, white.
 „ „ pumila, 6 inches, yellow.
 „ „ acaulis, 1 foot, white.
 „ „ triloba, 6 inches, yellow.
 Pyrethrum albo-pleno, 1 foot, white.
 Polemonium gracile, 1 foot, blue.
 Plumbago cærulea, 9 inches, blue.
 Phyteuma orbicularis, 1 foot, blue.
 Potentilla in variety, 1 foot, various.
 Ranunculus acris flore-pleno, 3 feet, yellow.
 „ „ gramineus, 1 foot, yellow.
 „ „ amplexicaulis, 1 foot, white.
 Saponaria officinalis, 2 feet, pink.
 Scilla Peruviana, 6 inches, blue and white.
 Silene viscaria pleno, 1 foot, red.
 „ „ dioica pleno, 2 feet, red.
 Spiræa lobata, 4 feet, pink.
 „ „ Japonica, 1 foot, white.
 „ „ ulmaria, 2 feet, white.
 „ „ variegata, 2 feet, white.
 „ „ filipendula albo-pleno, 1 foot, white.
 „ „ aruncus, 3 feet, straw.
 Sisyrinchium striatum, 2 feet, yellow.
 Stipa pennata, 2 feet, white.
 Thalictrum aquilegifolium, 4 feet, white and purple.
 Tradescantia violacea, 2 feet, violet.
 „ „ Virginica, 1 foot, blue.
 „ „ alba, 1 foot, white.
 Valeriana, 3 feet, red and white.
 Veronica maritima, 2 feet, blue.
 „ „ spicata, 2 feet, blue.
 „ „ teucrium, 2 feet, light blue.
 Viola calcarata, 6 inches, blue.—W. UPRIGHT, *Hill Nurseries, Southampton.*

VARIOUS LIQUID MANURES.

LIQUID manure, when properly prepared and applied to the various plants which the garden and garden edifices contain, is undoubtedly the most eligible, as well as the most profitable, form in which food can be given to those organised vegetable forms, the perfect development of which is the study and ambition of the cottage gardener and amateur; but, like the higher orders of animated nature, their lives may be injured or totally destroyed by the injudicious administration of that which would, if used otherwise, assist them in their growth, and the perfecting of every part of their being.

A new aliment, therefore, cannot be given confidently and with certainty of success but by those individuals who have a thorough knowledge of the properties which the ingredients possess that form the aliment, and the physical constitution of the plant to which it is to be given; and these are branches of knowledge that are but little under-

stood by those individuals for whose benefit I write, but who, nevertheless, feel deeply interested in the cultivation of the soil and the production of superior vegetables, fruits, and flowers, both for dishing and the exhibition table; and consequently, for their advantage in horticultural pursuits, I will state the manner in which I have prepared and applied a few of the different liquid manures that I have used, and some of the effects which I have witnessed them produce upon certain plants to which they have been given.

1. SODA ASH I consider one of the most valuable agents, when dissolved and diluted, that can be used in the nourishment of plants. Four pounds and a half of ashes, with three pints of quicklime, placed in three gallons of hot water, stirred occasionally, and allowed to remain for three or four days, will make, when diluted with rain water, 192 gallons of manure, that may be applied with the greatest confidence to kitchen-garden crops and soft-wooded flowering plants in the pleasure garden. It is suitable for light, sandy soils, and its effects are steady, certain, and lasting; but in using it for vegetables it will be advisable not to apply it to seed, nor until the seedling plants have expanded their second leaf. Then it may be given to them in the evening, after the sun is hid behind the hills, or when he is overcast, and the day is likely to continue so throughout, or when rain is falling from the clouds; then the watering-pot may be taken, and the ground drenched with the liquid, so as to be likely to reach every fibre. This I practise two, and, in some cases, three times a week. It is, perhaps, one of the most suitable liquids that can be given to Cauliflower, Endive, and Celery plants, as it does not, like those of a more stimulating nature, induce prematurely the elongation of the flower-stem; at the same time it leads the plants to the full development of their character, except in cases where the seed has not been of the right kind.

Here I will stop and relate an experiment which was tried, on the 12th of last July, upon the green fly, which had literally covered the plants of Endive that formed a row across one of the beds in the kitchen garden. The plants were in a healthy condition but a few days previously to the fly being discovered upon them, but on the day mentioned above they looked sickly and dirty. Destruction to the whole of the plants appeared certain unless they could be divested of the destructive Liliputian army which was feeding upon their blood. Having proved the effects of soda ashes as an insect destroyer in one particular instance, I determined to try their qualities upon the fly, and, if possible, settle them with it, even should it be at the expense of the plants. I therefore took eight gallons of soft water, and added soda ashes sufficient to make it six times stronger than that which is stated above, and in the evening took the watering-pot without the rose, and poured the whole of the liquid all over the tops of the plants; and, to my gratification, the following morning the plants were alive, and not a living fly upon them. They were syringed with clean water, and from that time until they were removed from the ground they received no check in their growth.

There is no plant that I know that would appreciate the use of liquid manure during the rest period. It has been given for experiment's sake to Justicias, Veronicas, &c., under pot culture, and to Apple trees and Gooseberry bushes in the open ground while in a dormant state; but in no case has the result been in favour of its use. The most suitable time, therefore, to commence applying it to established plants experience has taught me is after they have started into growth, and the winter covering of the buds has given way to the new unfolding foliage of the season; and to cuttings and seedlings under pot culture not until eight or ten days after they have been potted the second time. I have applied it to *Eranthemum pulchellum*, *Ruellia maculata*, *oblongifolia*, and *formosa*; *Thrysacanthus rutilans*; *Hexacentris Mysorensis*; *Justicia carnea*, *bracteolata*, and *formosa*; *Caladium odoratum*; *Columnea Kennedyana*; *Habrothamnus elegans*; *Passiflora cærulea*, *incarnata*, &c.; *Kennedya monophylla*, *longiracemosa*, and *nigricans*; *Veronica Hendersonii* and *Lindleyana*; Fuchsias, Geraniums, and the like with pleasing results.

Now, probably it will not be practicable, under all circumstances and at all times, to have the quantity above stated diluted and ready for use at one time. I will, therefore, take this opportunity to say that if it remains in the vessel in which it was dissolved it will take no harm until it is re-

quired for use, when a gill may be taken out of the vessel, and added to eight gallons of soft water, and applied to the plants, without the quality of the liquid being in the least deteriorated.—B. B., near Halifax.

(To be continued.)

QUERIES AND ANSWERS.

DIELYTRA SPECTABILIS SEEDLING PROLIFIC.— CULTURE OF VIOLA PYROLÆFOLIA.

"You may remember a discussion which took place in your columns three or four years ago about the seeding and raising the seed of *Dielytra spectabilis*. I remember sending Mr. Beaton a few seeds at that time, and he stated that plants produced from seed would probably bear seed much more freely than those raised from cuttings. I am writing this to confirm his opinion, having two very large seedling plants which are now covered with seed, and beg to inclose you a small branch, that you may see the habit if you have not yet. I presume the seed is of no value. Can the fact be explained as to the free seeding of plants so raised, for it is a fact not to be denied? I have large plants from cuttings growing alongside these seedlings, and not a pod of seed on them.

"While writing I shall be glad to ask if it is possible to flower *Viola pyrolæfolia*. I have had it some time, strong plants, and can get any amount of seed from them, but never one flower. Can Mr. Beaton give its proper culture? I have seen common Violets sometimes do the same."—A. R.

[Very much obliged indeed. We proved our hypothesis a score times, and you have done so with this *Dielytra*. If you sow the seeds some of the next generation will be still more prolific, and in a few more generations the plant would establish itself as a native. Before then, if it would cross with others of the family, the experiment could best be tried on one of the prolific plants. But, to give the fact a more practical value, why should not all the Pæonies and tree Pæonies seed as freely as Pansies, and cross more easily, by the very plan you adopted? We are persuaded every plant worth the trouble would yield seeds.

Divide the old plants of *Viola pyrolæfolia* in the spring just as they begin to stock, and make them into very little bits.]

TO CORRESPONDENTS.

GREEN ROSE (Belfast).—What the kind of Rose may be no one could tell from the specimen before us, which is a decided case of morphology—a large cluster of Roses in which every one of the parts is as decidedly green as the common leaves. We never saw a green full-blown Rose but this, and we never desire to see the like again. Very probably it is the *Rosier Bengale, a fleurs verts*. It was figured in the *Flore de Serres* last year, and M. Mieliez states there that it came from an English nursery.

NAMES OF PLANTS (Carrig Cathol).—No. 2 has no resemblance to *Virgineum* Geranium, which is as white as virgin snow, and makes the best white bed in the garden. No. 1 is most likely true, but is difficult to determine in the dried state in which it reached us. No. 4 is *Lonicera Japonica* of Thunberg, which is the same as *Caprifolium Chinense* of Loudon's Catalogue, and also the same as *Lonicera flexuosa* of the nurseries. Mr. Hogg's "History of the Vegetable Kingdom" puts all this to rights in the lists of genera to each division. After this most useful work is concluded we shall pull to pieces such catalogues as put wrong genera foremost, and next week we mean to show how ignorance, or pedantry, or both, when united, with or without the knowledge of the compiler, hurt the trade. No. 3 did not reach us. (Inquirer).—*Oxalis*, probably *floribunda*. (F. W. S.).—Your troublesome pond weed is *Ranunculus aquatilis*, or Water Crowfoot. (S. H. W.).—Probably *Combretum purpureum*, but we cannot be certain from such a specimen. (F. W. S.).—We cannot say from your two leaves; they seem as if from some species of *Amelanchier*.

BORONIA CUTTINGS (Amateur, Waterford).—We should advise you to keep your Boronias, and give them a little sweet bottom heat, taking care to edge up the corner of the bellglass at night. Sometimes they require a good while to strike. Small shoots about two inches long, getting firmish at their base, and taken off with a heel close to the older stem, we have found do best.

HARDY FERNS (Kate).—The only bother you will have will be the roots of the Lilac getting in among the Ferns, but try and lay the bricks hollow over these roots for a foundation; the rest is as plain as you wrote your letter. Any time from the end of September to April will do to put out hardy Ferns, but avoid little morsels of plants. Get good hearty lumps of roots with balls to them. By the by, which of the two plans did you adopt for the flower garden at last, and how does it answer?

SOWING STOCKS (An Old Subscriber).—Did you not read but the other day that Mr. Melville, the best grower of Stocks out of Germany, sowed them last year in the first week in July, and that the kind was the Intermediate Stock? Mr. James, gardener to the Rev. E. Philips, incumbent of Surbiton, is the best grower of the Brompton Stock out of Suffolk: his seedlings of them are just pricked off. Mr. James says the end of May is better than April to sow Bromptons, because "of getting over the winter" with less risk than older or stouter plants. Ten-week Stocks are sown from February to June.

CHRYSANTHEMUMS FOR SOUTH WALL (J. J. B.).—If the border is ready plant them out at once, and lay the shoots against the wall in the form of a lady's fan, and if there are more shoots than will allow of six inches between the points of the shoots, supposing them to be from nine inches to a foot long, cut out some to allow the spokes of the fan to lie at that distance. Give water occasionally, and keep the shoots nailed to the wall as they grow, and remember this rule—every side-shoot from the roots to within six inches of the top of the shoots must be cut out—not merely stopped, but cut below the lowest bud on it. That is the only secret in growing Chrysanthemums against anything or anybody.

CHEAP ICE-HOUSE.—"I shall be much obliged for any hints as to the construction of an inexpensive ice-house. My ground is flat, but there is a small lime-stone quarry near, where a slope could be managed to assist the drainage. Any directions and information as to the probable expense would oblige."—E. P.

HYMENOPHYLLUM WILSONI (K. M.).—No doubt it can be raised from its seeds, or spores, but we have no experience in the practice. Like its relative, *H. Tunbridgensis*, it is usually propagated from rooted pieces. Any reader who can give us directions for raising these Hymenophyllums from seed will much oblige us.

ROSES WITH GREEN CENTRES (F. C. D.).—Many Roses, such as *Souvenir de Malmaison*, are liable to this morphology, or conversion of the stamens into leaves. Gardeners have failed either in discovering the cause or a remedy. It seems to occur chiefly in the most vigorous.

OSAGE ORANGE SEED (A Constant Reader).—If we wanted any quantity we should write to some leading seedsman in New York. It cannot be obtained in England. The American nurseryman would give you every information.

MOWING MACHINE (Cochin).—The first, and the smallest size. Even the smallest requires all a man's power.

VARIOUS (H. J. W.).—You will see in to-day's paper an article on the common kinds of garden vegetables which will meet your case; others will be following, and if you peruse our pages that treat on the culture of flowers you will then see what is best to be done at each respective season, as well as the best varieties of each species most generally grown, not only in new things, but also in neglected old ones, for our purpose is as much to restore the latter to their proper level as to support new ones.

SAL AMMONIAC FOR PLANTS (J. S. A.).—A piece of this the size of a hen's egg, or the same of sulphate of ammonia added to a hog-head of water, will benefit your plants, given not oftener than once a week. We should omit the lime.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JULY 20th. ROYAL AGRICULTURAL SOCIETY. SALISBURY. The Exhibition will be open to the public on the 22nd.

JULY 28th, 29th, and 30th. SHEFFIELD, SOUTH YORKSHIRE, AND NORTH DERBYSHIRE. Sec., William Henry Dawson, Fig Tree Lane, Sheffield.

AUGUST 8th, 10th, 11th, and 12th. CRYSTAL PALACE. Sec., W. Houghton. Entries close on the 11th of July.

AUGUST 19. BRIDLINGTON. Sec., Mr. Thomas Cape.

AUG. 29th. CALDER VALE. Sec., W. Irvine, Esq., Holmfild, Halifax.

SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.

SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Sec., Mr. H. Churchill, King's Head Hotel.

OCTOBER 1st and 2nd. WORCESTER. Sec., Mr. G. Griffiths, 7, St. Swithen Street, Worcester. Entries close Sept. 19th.

NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.

DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.

DECEMBER 30th and 31st. BURNLEY AND EAST LANCASHIRE. Entries close December 1st. Secs., Angus Sutherland and Ralph Landless.

JANUARY 4th, 1858. KIRKCALDY POULTRY AND FANCY BIRD SHOW. Sec., Mr. Bonthron, jun., Thistle Street.

JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.

JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.

N.B.—Secretaries will oblige us by sending early copies of their lists.

THE CRYSTAL PALACE POULTRY SHOW.

WE were reading a newspaper in a railway carriage when we were pleasingly interrupted by a nice little girl, who asked us to read her something. We are very fond of

children, and therefore joyfully did as she wished. We gave her the account of the Lord Mayor, &c., going in state to present an address of congratulation to Her Majesty on the birth of a princess. Then we were questioned in every way. "How was the Lord Mayor dressed, and who went with him?" We told her the sword-bearer, who carried the sword; the mace-bearer, who carried the mace; and the remembrancer. "What is he for?" said our young friend. "To remind the Lord Mayor of anything he is likely to forget." "A very useful man," said the little girl; "mamma is my remembrancer. I forgot my handkerchief this morning, but mamma brought it. Do you ever forget?" said she, looking up. "Sometimes," said we; and then we recollected we had promised ourselves and our readers to give notice when the entries would close for the Crystal Palace, and the time was at hand. We gave due notice last week that they would close on Saturday, July 11th. We thus assumed the office of remembrancer, and our responsibility ceased. We hope we shall not at the Exhibition hear one lament that he did not send because he was not reminded; another that his entries were too late; a third that he meant to send, but he was haymaking. It has been amply advertised, and we have now done our part. Like the brazen head of Friar Bacon we said, "Time is," and we now say, "Time was."

Apart from our duty we confess to a liking for Chicken Shows in the summer. They offer rewards which are well merited for those who by skill or care have forestalled nature, and who have produced early birds. A Show of this nature is a valuable book for the amateur, and he has opportunities of comparison which are not to be found later in the season. In the winter the chickens, if hatched early, show like old birds, but at this season their youth is evident. With a catalogue the different ages may be noted, the birds compared, and knowledge acquired.

The liberality of the company and the straightforwardness and punctuality of Mr. Houghton at the last Show afford a strong claim on amateurs, which we hope they will respond to. The building itself and its accessories make it one of the most luxurious Shows in England. Each class may be viewed separately, and intervals filled up with music, promenades, flowers, paintings, &c. The spectator may leave the Poultry Show of 1857, and in five minutes be deep in *le dernier des Abencerrages*, with all the scenery about him.

In some shows it is difficult to take children with comfort, because they have no resting place. Ladies who wish to see all classes are often physically unable to remain the four necessary hours afoot, but this is essentially a treat for them. The beautiful gardens offer a resting place for the body; and the eye, when tired with critically examining a class, may rest on beautiful beds of flowers. Being somewhat of enthusiasts in poultry we may be pardoned if we mount our winged steed, and, wrapped in the anticipation of a great treat, invite all our readers and friends, promising them a "glorious day."—B.

THE CRYSTAL PALACE SHOW AND A NORTH COUNTRY AMATEUR'S LETTER.

I TAKE great interest in all Poultry Shows, and consider that, next to Birmingham, the Crystal Palace Shows deserve most support. At the winter Show several matters were overlooked that I trust will be remedied at the approaching summer one. First, with regard to the pens. Mr. Hewitt very properly describes them as sufficiently roomy. They are, however, capable of improvement. The greater number of them formerly belonged to the Anerley Committee, who are not unknown to fame, and were intended to be placed in one row out of doors; consequently they were made eight or nine inches higher in front than behind, the top, therefore, forming a sloping roof from front to back. These additional inches are a great disadvantage when, as at the winter Show, the pens were placed one above another. The trestles, also, were full high, so that a very imperfect view only could be obtained of the birds in the upper tier. The remedy is easy. Let the pens be made the same height in front as at the back. I trust the authorities will be able to allow a greater space for the birds than they did at the

winter Show. It was very close and warm even then, and large additional space and ventilation will be absolutely necessary now, when the weather will be so much hotter, and so many more visitors may reasonably be calculated on.

In a first Show several errors are excusable. I allude to them now solely because I wish to see them rectified.

With such an establishment as Messrs. Bradbury and Evans's at command, a railway connected with the building, and a possibility of sending a messenger by any train without cost, there is not the slightest reason why the catalogues should not be ready by the time the Show opens. Catalogues yield a good profit, and by all the rules of good management their sale ought to be encouraged in every way. At the last Show I could not obtain a catalogue till towards noon, and while waiting had full time to observe how assiduously Mr. Houghton worked, and how very slowly his subordinates did. I longed to set four or five of those straight-backed gardeners in their abominable uniform (which, if arranged by Sir Joseph Paxton, would prevent his being engaged at Stultz's) to work, nailing up the tickets and sweeping out the place. I watched for a long time, and was driven from my "look-out" by the approach of a man wheeling a large barrow full of excrement, collected from the different pens. The quantity surprised me, and I ascertained that this was the first time the pens had been cleaned, the birds having been in them *two nights and a day*. The dirty appearance of most of the birds was thus easily accounted for. Reddish sand was used to sprinkle the floors of the pens: good "sharp" gravel or bran ought to be used. If the floors be sprinkled with the latter before the birds are penned they will be cleaned much easier.

I was very glad to see the letter of the "NORTH COUNTRY AMATEUR." I agree with him that more than one Judge is desirable, solely for these reasons. I think, in the hurry of examination, it is possible one Judge may overlook a good pen. Again, I consider no one amateur has a thorough knowledge of every breed. To make a good Judge requires one who has bred every variety, and that, too, in large numbers. A man may judge old birds much easier than chickens. He cannot, I feel convinced, judge the latter properly, exhibited as they are of all ages, without he has bred them.

As an exhibitor of several years' standing, I am, of course, not ignorant of the insinuations that have been made against Judges. I never heeded them. I know nearly every Judge, and consider I should be paying them no compliment if I thought it necessary to defend them. We have had these imputations circulated for some years: they ought now to be proved or not indulged in. Mr. Hewitt has publicly reflected on one or more of a small body of gentlemen; he is in all honour bound to make his charge specific, or, in his own words, make "*an open accusation*." The quotations of the "NORTH COUNTRY AMATEUR," to my mind, leave no alternative except to withdraw his letters. I have no curiosity to be gratified, and I think "gratification" is an unfortunate word for the "NORTH COUNTRY AMATEUR" to have used; but the result of his letter must be beneficial if Mr. Hewitt exposes the parties who "pertinaciously adhered" to their "flagrant decisions." So much the better; they will meet their reward. On the other hand, if Mr. H. "shrinks from the application of his own remedy," which has yet to be proved, the inference will be that the disease never existed, and such insinuations will be put a stop to, and Poultry Shows in consequence be made more pleasant even than they are now.—JUSTICE.

PRESCOT POULTRY SHOW.—JULY 9TH.

THE arrangements were very good. The Judges were Mr. Challoner, of Chesterfield, for general poultry; Mr. Woodcock, Sutton, Game; Mr. Chandler, Liverpool, Pigeons.

Dorkings, especially the chickens, first-rate. *Spanish*, good. *Game*, first-rate, and as good a lot of single Game cocks as ever were put together. A notice was put up which gave great satisfaction—that the Judges' decisions would be *final*, and no appeal would be heard. I particularly wish to draw your attention to this new feature in Poultry Shows. The constant fault-finding and appeals against the Judges'

decisions were ruining all the Shows, and driving Judges out of the field. Capt. Hornby at last achieved a victory over Mr. Wright's long victorious pens. The attendance was good, and the Secretary and Committee very active, and attending personally to everything.—W.

The following is the list of prizes:—

SPANISH.—Cup, Capt. W. W. Hornby, Knowsley Cottage, Prescott. Second, Mr. J. Dixon, North Park, Bradford. **Chickens.**—Cup, Mr. J. R. Rodbard, Langford, Bristol. Second, Mr. J. Mashiter, King Street, Ulverstone.

DORKING (Coloured).—First, Mrs. W. Hornby, Knowsley Cottage. Second, Mr. A. Potts, Boughton, Chester.

DORKING (White).—Second, Mr. J. Robinson, Vale House, Garstang. (First withheld.)

DORKING CHICKENS.—Cup, Capt. W. W. Hornby, Knowsley Cottage. Second, Mr. W. Evans, Hurst House, Prescott.

COCHIN-CHINA (Cinnamon and Buff).—Cup, Mr. W. Copple, Eccleston. Second, Mr. T. Stretch, Marsh Lane, Bootle.

COCHIN-CHINA (Brown and Partridge).—First, Mr. G. C. Adkins, Edgbaston, near Birmingham. Second, Miss V. W. Musgrove, West Bank, Aughton, Ormskirk.

COCHIN-CHINA (White).—First, Mr. R. Chase, Moseley Road, Birmingham. Second, Mr. R. Teebay, Fulwood, Preston.

COCHIN-CHINA CHICKENS.—First, Mr. T. Stretch, Marsh Lane, Bootle. Second, Mr. J. R. Rodbard, Langford, Bristol.

BRAHMA POOTRAS.—First, Mr. R. Teebay, Fulwood, Preston. Second, Mr. J. Dixon, North Park, Bradford.

HAMBURGH (Golden-spangled).—Cup, Mr. W. R. Lane, Bourn Brook Farm, Birmingham. Second, Mr. W. Banks, Weston House, Runcorn.

HAMBURGH (Golden-pencilled).—First, Mr. W. C. Worrall, Rice House, near Liverpool. Second, Mr. W. Banks, Weston House, Runcorn.

HAMBURGH (Silver-spangled).—First, Messrs. Bird and Beldon, Eccleshill Moor, Bradford. Second, Mrs. H. Sharp, Mill Lane, Bradford.

HAMBURGH (Silver-pencilled).—Cup, Mr. J. Dixon, North Park, Bradford. Second, Mr. E. Archer, Malvern, Worcester.

HAMBURGH CHICKENS.—First, Messrs. Bird and Beldon, Eccleshill Moor, Bradford. Second, Mr. E. Archer, Malvern, Worcester.

POLISH (Golden).—Cup, Mr. R. H. Bushe, Litfield House, Clifton, Bristol. Second, Mr. J. Dixon, North Park, Bradford.

POLISH (Silver).—First, Mr. J. F. Greenall, Grappenhall, Warrington. Second, Mr. G. C. Adkins, Edgbaston, Birmingham.

POLISH (any other variety).—First, Mr. J. F. Greenall, Grappenhall, Warrington. Second, Mr. J. Dixon, North Park, Bradford.

POLISH CHICKENS.—First, Mr. G. C. Adkins, Edgbaston, Birmingham. Second, Mr. J. Dixon, North Park, Bradford.

GAME COCK.—Cup, Mr. J. Lyon, Vicarage Place, Prescott. Extra Prize, Mr. E. Worrall, Knotty Ash House.

GAME (White, Piles, and Duckwing).—Cup, Mr. T. Burnett, Hutton, Preston. Second, Capt. W. W. Hornby, Knowsley Cottage.

GAME (Black-breasted and other Reds).—First, Capt. W. W. Hornby, Knowsley Cottage. Second, Hon. W. W. Vernon, Wolseley Hall, Rugeley.

GAME (any other variety).—First and Second, Mr. J. Dixon, North Park, Bradford.

GAME CHICKENS.—First, Mr. W. Lomax, Stone Clough, Manchester. Second, Mrs. H. Sharp, Mill Lane, Bradford.

ANY OTHER DISTINCT BREED.—First, Mrs. H. Sharp, Mill Lane, Bradford (Black Hamburgs). Second, Mr. W. Dawson, Hopton Mirfield, Yorks (Sultans).

BANTAMS (Gold-laced).—First, Mr. G. C. Adkins, Edgbaston, Birmingham. Second, Capt. W. W. Hornby, Knowsley Cottage.

BANTAMS (Silver-laced).—First, Hon. W. W. Vernon, Wolseley Hall, Rugeley. Second, Mr. J. Dixon, North Park, Bradford.

BANTAMS (any other variety).—First, Mr. T. Durning, Rainford. Second, Mr. M. Ridgway, Dewsbury.

DUCKS (Aylesbury).—First, Mr. J. Fowler, Prebendal Farm, Aylesbury. Second, Mr. R. Sergenson, Chester Street, Liverpool.

DUCKS (Rouen).—First, Mr. H. Worrall, Spring Grove, West Derby. Second, Mr. W. Evans, Hurst House, Prescott.

DUCKS (any other variety).—First, Mrs. S. Rigby, Eccleston. Second, Mr. F. W. Earle, Edenhurst, Prescott.

TURKEYS.—Prize, Mr. J. R. Rodbard, Langford, Bristol.

GEESE.—First, Capt. W. W. Hornby, Knowsley Cottage. Second, Mr. J. Fowler, Prebendal Farm, Aylesbury.

PIGRONS.—*Carriers.*—Prize, Mr. W. Scott, Snig Lane, Prescott. *Balds.*—First, Mr. J. W. Edge, Aston New Town, Birmingham. Second, Mr. W. Sephton, Victoria Place, Prescott. *Beards.*—First, Mr. J. W. Edge, Aston New Town, Birmingham. Second, Mr. H. Foster, Lane Ends, near Prescott. *Runts.*—First, Mr. E. Worrall, Knotty Ash House. Second, Mr. H. Child, Sherbourne Road, Birmingham. *Owls.*—First, Mr. W. Sephton, Victoria Place, Prescott. Second, Mr. G. C. Adkins, Edgbaston, Birmingham. *Fantails.*—First and

Second, Mr. G. C. Adkins, Edgbaston, Birmingham. *Powters.*—Prize, Mr. G. C. Adkins, Edgbaston, Birmingham. *Any other distinct variety.*—First, Mr. E. Worrall, Knotty Ash House. Second, Mr. H. Foster, Lane Ends, Prescott.

OUR LETTER BOX.

GOSLINGS (Goose).—The earliest hatched, if they thrive, fetch the highest price. Our quotations are what they are retailed at.

ANERLEY POULTRY SHOW (Betchworth).—We should sue the Secretary for the money received for the Ducks. He is a clerk in Crowley's brewery. Messrs. Crowley supply the Anerley Arms. Oblige us by particularising the inaccuracies you allude to. We are preparing for a second edition.

MOTTLED TUMBLER (T. W. Wrench).—The properties of a Mottled Tumbler are the same as those for any other variety, as described in THE COTTAGE GARDENER of March 31st and April 7th, the feathers, from which they derive their name, being mottled. There are two varieties, the *Dark-mottled*, having only a few white feathers about the head, neck, and shoulders; and the *Gay-mottled*, being nearly white, with dark flights and tail, and only a few coloured feathers about the body. These are sometimes called Ermined.—B. P. B.

ERRATA.—March 31st, 1857, page 451, Tumbler Pigeons, 25th line, for *Grey Mottle* read *Gay Mottle*; 46th line, for under the *back* read under the *beak*. May 26th, 1857, Laugher Pigeon, page 126, 2nd column, 8th line, for *Grey Mottle* read *Gay Mottle*.—B. P. B.

DORKING CHICKENS DISEASED (R. Lockhart).—The symptoms are those of *roup*. See the treatment in "The Poultry Book for the Many," which you have.

PRIZE ROUEN DUCKLINGS (Amicus Galli).—"Can you tell me the weight necessary to arrive at in a pen of *Rouen Ducklings* to obtain a first prize? My best ducks of this variety, which weigh considerably over 10 lbs. the pair, age six weeks and five days, have a white ring round the neck. Is this likely to disappear in the moult, and how is so extraordinary a variation of colour accounted for? Should the head of the drake be all one colour, or should he possess the dark stripe above and under the eye so beautifully developed in the duck? Will a spotted bill be rejected if the spots are only on the edge, and if the general appearance is uniform?"

[Although weight is desirable, purity of plumage is more imperative. In every point Rouen Ducks should resemble Wild Ducks. The ring round the neck is a defect, and is more likely to increase than to disappear. The head of the drake should be entirely green. Spots on the edge of the bill are not very important, but in close competition they would tell against the bird. The weight you mention is *very good*, and is large enough for success anywhere if the plumage is correct. It will still increase as the birds get older.]

ERROR.—"Permit me to rectify a mistake of your compositor in my contribution respecting the Crystal Palace Show in last week's COTTAGE GARDENER, which, although at first sight so trivial, as being simply confined to a single letter only, changes my ideas altogether. At page 223, eleven lines from the bottom, 'size' is printed instead of 'sire.' Perhaps your contributor who now styles himself 'A NORTH COUNTRY AMATEUR' will not shrink from the application of the remedy I myself proposed, but at once openly—to use his own words—'venture to roll away the sulphureous vapours which prevent our discerning his features,' and in which at present he is designedly enveloped, by the frank acknowledgment of his individuality, as I myself have purposely already done at the foot of the self-same article he so deprecatingly refers to."—EDWARD HEWITT, July 8th, 1857.

LONDON MARKETS.—JULY 13TH.

COVENT GARDEN.

The supply is now heavy of all descriptions of goods, and business not quite so brisk to clear it off—prices, consequently, receding. Foreign consignments inwards comprise *Melons*, *Apricots*, *Pine Apples*, and *Cherries*; and in Vegetables we are still receiving *French Beans*, *Artichokes*, and *Endive*, with some very good *Tomatoes*.


POULTRY.

There has been a sensible falling off in the trade during the past week, and all betokens the decline of the London season at the West End. Large fowls continue scarce and in demand.

Large fowls. . 7s. 0d. to 8s. 0d. each.	Guinea Fowls 0s. 0d. to 0s. 0d. each.
Smaller do. 4s. 6d. to 5s. 0d. „	Pigeons 10d. to 11d. „
Chickens . . 2s. 6d. to 3s. 9d. „	Rabbits . . . 1s. 5d. to 1s. 6d. „
Goslings 6s. to 6s. 6d. „	Wild ditto 8d. to 9d. „
Ducklings . . 3s. 0d. to 4s. 0d. „	Leverets . . . 3s. 0d. to 4s. 6d. „

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—July 14, 1857.

WEEKLY CALENDAR.

D M	D W	JULY 21—27, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
21	Tu	Thoroughwax (<i>Bupleurum</i>).	29.991—29.949	75—60	N.W.	07	10 a. 4	2 a. 8	sets		6 5	202
22	W	Hensfoot (<i>Caucalis</i>).	29.939—29.833	83—47	S.W.	—	11	1	9 a. 5	1	6 8	203
23	Th	Carrot (<i>Daucus</i>).	29.730—29.604	86—57	S.E.	—	12	0	9 19	2	6 10	204
24	F	Corn Parsley (<i>Sison</i>). [1797.	29.683—29.607	77—54	S.W.	01	14	VII	9 32	3	6 11	205
25	S	ST. JAMES. DUCHESS CAMB. B.	29.953—29.801	76—40	S.W.	—	15	57	9 42	4	6 12	206
26	SUN	7 SUNDAY AFTER TRINITY.	30.060—30.010	76—41	S.W.	02	17	56	9 52	5	6 13	207
27	M	Water Dropwort (<i>Oenanthe</i>).	30.103—30.022	77—50	S.W.	22	18	54	10 3	6	6 12	208

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 73.7°, and 52.3°, respectively. The greatest heat, 92°, occurred on the 25th, in 1844; and the lowest cold, 40°, on the 23rd, in 1843. During the period 105 days were fine, and on 91 rain fell.

ROSE CULTURE AND CUTTINGS.

I BEGIN to write this on St. Swithin's day, but the only one of the saints in whose influence on the concerns of men I ever had any faith was St. Andrew, St. Andrew's fair at the beginning of this century having had a wonderful influence on the mind of the rising generation. I am now appealed to on the score of propagating Roses in summer, and I must own that I have some strong misgivings about the wisdom of considering this subject solely on scientific principles, and apart from all considerations on the power and influence of St. Swithin's reign during the next six weeks. But I shall go a step farther, the appeal being from an Irish suitor (F. C.), and say distinctly that a propagator who disregards the influence of St. Patrick on the weather for his grafts in the spring, and that of St. Swithin on his buds and cuttings at this season of the year, may operate on scientific principles to the letter of the law, and yet find to his cost that science is a feeble oar when worked against wind and tide or all weathers.

According to the oracle we shall have a fine time of it henceforth to the end of harvest; therefore Rose cuttings and cuttings of bedding plants should be made and planted rather on the principle of holding up under hot weather and less moisture than usual, than strictly on the principles of scientific propagation; in other words, with an eye to the powerful influence of St. Swithin's reign on the weather.

Where to plant is the next branch of the question. Bedding and all other *Geraniums* do best if they are planted full in the meridian sun to the middle or end of August; but *Roses* and all woody cuttings do best on an east aspect, where the sun leaves them at or before eleven o'clock in the forenoon, and does not touch them again for the day; and the reason for that is this—the face of nature is refreshed and put to the severest trial alternately every twenty-four hours. The dews and lower temperature of the night refresh every living thing, and all nature droops more or less under a burning sun. The propagator refreshes his cuttings in the evening, each kind according to its power of sustaining the heat of the day; and on an east aspect, and under a wall, hedge, or other fence, the sun leaves them by the time they are dried from the last evening's watering, and so the heat of the day is reduced to them to a minimum, without submitting them to the influence of shade under a north aspect, which shade is as damaging one way as too much sun is the contrary way.

By the by, there is a most essential rule or natural law for a branch of gardening which meets us at this point, and we ought to make a point of remembering it. All cuttings which do not bear the full sun should be on an east aspect, as the safest and least stimulating place; but a west wall or aspect is better than either south or east for all kinds of plants which are liable to be hurt by frost, but the reason must stand over for explanation. Suffice it to say, an east aspect for the best summer cuttings, and a west aspect for the best

half-hardy plants. Now, would it, or would it not, be pushing the rule too far to say that the aspect which is best for a set of cuttings in the hands of a novice must also be the best under the ablest management? The novice, finding an east aspect the best for his cuttings, sets his frames, lights, and handglasses for propagation on the east aspect also, while the man of principles puts all his glasses to the mid-day sun, and gives them such and such aspects as he knows to be best, using some temporary contrivance for shading.

Let us now square up for the next start. Cuttings made not so much on scientific principles as on the supposed state of the weather, for cool, close, cloudy, or rainy weather say the more leaves the sooner the roots, and more of them; and for dry, hot, sultry, and burning weather say the contrary, less leaves, less danger, and less attendance. An east aspect is best for such cuttings as will not do on a south aspect, and all glasses for cuttings to face the meridian sun, so that when no more shading is requisite the young plants may receive the benefit of every blessed ray of our autumnal sun. I should not mind it much if I had to prove this "squaring" in the face of all the philosophy on earth.

The best place to strike summer cuttings of *Roses* is a slight hotbed, with the glass shaded from ten in the morning to four or five in the afternoon, and a close, moist atmosphere by a slight syringing every afternoon of a hot, sunny day when the shading is removed, and to give a little air *all night* as soon as the buds begin to start; also to give them more light by not shading them so early in the day, or keeping it on so late in the afternoon, and after the first week not to shade them on a cloudy day; also to take off the glass at night as soon as they are rooted, then to have them slightly sprinkled from a rose pot every night, and to put on the glass early in the day, leaving air on at the back of the frame, and if any of them flag with the sun to put some slight shade over them till they are firm enough to stand without it. They will be more safe out of pots if they are firmly planted out in any light, sandy compost about two inches deep, and not too much crowded. That way the frame and lights might be removed when no more necessary, and giving them their chance till the end of October or to the following February, when they should be planted out into nursery rows or beds; but if they are in pots the best way would be to plant out the balls entire in a sheltered place till the winter was over, when they should be shaken out and planted separately.

When handglasses are used I would never plant *Rose* cuttings in pots, or put the glasses behind a wall, or under the shade of trees. I should first consider the best spot to winter them in a very cold situation. I should winter them on a west aspect, with shelter from the north and east, and I would leave them where they rooted till the end of February; and if I did not want the glasses I would let them remain over the cuttings all the winter, and treat them exactly as I would Cauliflower plants; and when no glasses are used I would have them on an east aspect, and, having had no coddling,

they would stand the first winter there if the parent plants would; but I would mulch between the rows, and also give them room enough to stand there the first season.

The next point, and the most important, is the choice of Rose cuttings; for under a simple, plain system like this I must conclude that the reader knows very little indeed about the subject in hand, that he is eager after this information, and that he or she believes every word I say. All the Roses in this kingdom have flowered last June except so and so; but no amateur would wish cuttings of a so-and-so Rose, therefore we will pass them altogether; and every Rose which bloomed in June, from the old *Cabbage Rose*, the best of the race, to the young and handsome *Isabella Grey*, ought to be "regulated" in July, if ever so little, although people seldom do so in these days; yet July is the most proper time in the whole year for pruning to effect a regular form in Roses, no matter the kinds. Now, it is from the July pruning that all amateurs should look for their summer cuttings of Roses, and from no other part of the bush or tree upon any consideration whatever, and they can no more part from it than grasp the Scotch Thistle with impunity. In all full-grown Roses of the Perpetual classes some of the more crowded shoots which have flowered in June ought to be cut out entirely, to make room for young shoots to blossom in the autumn, and two-thirds or more of all the bloomed shoots on the stronger summer Roses ought also to be cut out from the very bottom in July, and *in July only*, to make room for those shoots that are to bloom next June. In looking over the Roses you will find now that the June Roses "bloomed" principally on short side-shoots from the shoots of last year's growth, that a shoot or more at the top of the old one ran up more than those lower down on that shoot; but have nothing to do with any of the shoots which "bloomed" if they are over five inches long or less than two inches, and never make a July Rose cutting but from a shoot which has just bloomed if you can get enough of them, but if not take side-shoots only of about the same length and hardness as those that have given the first bloom.

As this is to be a hot, dry season the cuttings must be made with less of the leaves about them than is generally done, and if they are to be fully in the open air very little of the leaves must be left on; say the cutting is just four inches long, the three topmost leaves must be left on, and each of them to be cut in two, leaving three half leaves to such a cutting, and two only to shorter ones. Three half inches is the proper depth to put in July Rose cuttings if they are under glass, and two inches in the open air; but in case St. Swithin should really hold out this season you had better put them a little deeper in the open air.

To make Rose cuttings from these short side-shoots slip them from the parent shoot by a downward pull. This gives them a heel, and the heel preserves the bottom from rotting, which is the great danger in all Rose cuttings; but these shoots being nearly ripe down at the heel, the heel may be pared with a sharp knife to half its thickness on the split side. This will facilitate the formation of roots.

If you try to make layers of Roses so late as this (and they will root now faster than at any time, though the layers ought not to be taken off till the spring), recollect that no part is so fit as the growth of this summer, and the tongue of the layer must be on the *upper side*; then turn gently till the tongue is free from the cut.

D. BEATON.

P.S.—In Mr. Upright's valuable list of hardy plants in bloom at Southampton on the 26th of June, p. 240, is *Ranunculus amplexicaulis*, which I have been hunting for for a long time as one of the earliest of our spring flowers. His plant is a foot high, but my kind is hardly

six inches, and is never in bloom after the end of March. Mr. Jackson, of Kingston, had my plant four years back, but some one bought it up before they had any increase from it, and I know not where to find it. I should like to see a flower and leaf of the Southampton plant. The pretty little bulb called *Calliprora alba* I never knew to bloom near London till the end of July, nor more than to one-half the height of his plant. Here is shown the difference of climate on the southern coast.

INFLUENCE OF COLOUR IN HEATING, &c.— CONCRETING AND TARRING THE SURFACE OF BORDERS.

"I HAVE seen it recommended in papers on Vine borders to concrete the *surface*, covering it with a coat of gas tar, the result of which is to increase the warmth of the ground, while the use of pipes admits of its being watered when necessary. I am induced to ask whether you think that covering the *surface* of the ground with common slates would be attended with the same effect. I have put down a few; but, though the surface of the *slates* is so hot that you can hardly bear to touch them, the ground beneath them seems to be no hotter than ground exposed to the sun in an ordinary way."—P.

I am sure that our correspondent will forgive this part of his letter having such a prominent place, were it for nothing else than holding up a *beware* of drawing conclusions from any articles in this work in any respect different from their legitimate purports, and also for clearing away some mists that seem so bewildering to young beginners. The question was lately put to several young gardeners whether, in similar circumstances otherwise, ground that was hard and unmoved, or ground well stirred at the surface, would become the hottest in summer, and the verdict was given unhesitatingly in favour of the stirred ground; and, if this should be proved to be correct, then I fear that much of our practice in this respect is based on error.

The concreting and tarring the surface of Vine borders in certain circumstances have not been spoken of in this work so much as a means of increasing *warmth* in the soil as for keeping that soil in a state of comfortable dryness in winter and spring. No doubt this dryness indirectly contributed to warmth, inasmuch as the cold rains of winter could not get in, and, whether covered or exposed in spring or early summer, there would be less of the cooling effects of evaporation, because there was comparatively little moisture to exhale. Our youngest readers will better understand what I mean if they will recollect how hot and uncomfortable they felt in one of those very warm days of June, and what a relief it was when the perspiration broke freely from every pore of the skin. This was just evaporation producing coolness, and presents one reason why persons from these temperate latitudes who do not perspire freely cannot live long in warm countries. Now, the heat of the sun acts upon the soil just as it does on our bodies; for so long as there is an abundance or a redundancy of moisture in it to be exhaled by evaporation, just so long will it be before the soil becomes greatly heated.

Hence the importance of well-drained land, or soil open and naturally dry, for all kinds of spring crops. The sun heats such soil at once. On wet soils the contest goes on between heating and drying by the rays of the sun and cooling by evaporation, and therefore they lag behind the drier soil, because, other things being equal, they can only be equally heated when equally dried. As an example, take a bottle of water, cork it, and wrap it tightly in a dry, black, woollen cloth, and set it right in the sun: you will see how soon it will get warm. Any cloth would do, but I mention black as being a good absorbent of heat. Take a second

bottle and do with it likewise, only keep the woollen cloth wet, and you will perceive that ere long you will have the water inside as cool as if it had been standing in ice. The evaporation produces the cold. "Why, any tyro could tell us all about that, and why encumber THE COTTAGE GARDENER with such self-evident simplicities?" Why, just because I am so thorough a tyro as to have found out that most of our failures arise from neglect or contempt of these simplicities. Very likely I might have seen you—I should not have had to travel far to see some one—turning out early Peas from boxes in a beautiful dry day in March, planting them nicely in rows, finishing them off with the eye of an artist, and then watering them overhead as you would do a Celery bed in July, or at least thoroughly moistening the soil from the surface downwards; and then again, in the middle of May, the same person is turning out bedding plants, and he uses the water-can freely over the bed as he finishes it, and then there are notes, not of admiration, but the reverse, when the plants do not thrive. Such simplicities thought of might have suggested that the cooling effects of evaporation might next to freeze the stems of the tender plants, while, if the soil was dry, the temperature might have been from 5° to 15° higher; and that therefore, though watering such freshly turned out plants would be necessary, it should have been confined to the roots and the soil immediately around them, and so managed that the surface of the ground should be left as dry as possible.

When for several years I allowed the surface of a Vine border to be covered with a concrete of gravel, lime, and tar, so that not a drop of water could get through it, and recommended those trying such a plan to have pipes fixed that they might water at pleasure, I never found this watering necessary, as when examining the border I never found it extra dry, and, of course, never wet. It seemed capable of drawing moisture to itself from the surrounding ground. Under such circumstances the Vines were excessively fertile, and the ground under the concrete one mass of fine healthy roots; but I thought the Vines were getting weaker, and therefore removed the concrete and top dressed. A few years' experience, even though it answered well, would not be enough to warrant me recommending a continuous impervious-to-water concreting, and before our correspondent did so I would advise him to wait for further evidence from experienced growers. The object I had in view, however, was not so much to increase heat as to secure dryness. I have already mentioned, in a late volume, how Mr. Judd uses a concrete of lime and gravel made smooth over early vinery borders every winter, and removes it in summer, placing it in a heap, adding a little fresh lime and the necessary water at the end of the autumn. Such a mode secures the desired dryness, and yet permits of mulching in summer. The ground here is very retentive of moisture, and therefore to keep the borders moderately dry, and economically as well, can be done without going to the expense of covers or tarpauling. I rake the borders smooth before the autumn rains, water them slightly, and roll or beat them smooth with a spade, or perhaps spread half an inch of fresh, moist cowdung over them, made smooth also; on this coal tar at about one penny per gallon is spread over thinly, in thickness from a thin wafer to a sixpence, and a little dry sand or sawdust is thrown over it, and it becomes a firm cake, through which not a drop of water will pass. If the sun was very hot afterwards this thin covering might be dried and cracked, and a sharp frost would heave it up and break it; but a little litter thrown over prevents all such casualties, adding more litter or fermenting material when we wish to excite the roots, and removing the covering and tar surfacing in June or earlier as convenient. It separates easily from the ground, or at least holds very

little of it, when moist, and if exposed to the summer's sun for a few days such a thin covering will crack and lift easily in cakes. If the tar, gravel, &c., are one inch in thickness they will not be much influenced by the sun, and the heat in the soil beneath them, if compact and firm, will be greatly increased during the day; but on the same principle that *black* not only absorbs but radiates heat, such a black-surfaced border will part more quickly with heat in a clear night than a common earth border would do. In experimenting with thermometers in tubes beneath such borders the extremes, in such circumstances, were very great; and to neutralise them I tried whitening and stone-colouring the surface, which reflected the heat instead of absorbing it.

It is, therefore, only in an indirect manner that the concreting and tar surfacing of borders affect their general temperatures. No doubt a black surface will become more heated under the influence of the sun's rays; but that heat can only be retained when the sun has ceased to shine, and especially in clear nights, by covering to prevent the cooling effects of radiation. As illustrative of this I will mention what came under my observation. A border was covered with leaves, &c., in which no heat could be perceived in June. A thermometer two inches below the surface, in a tube placed longitudinally along the border, indicated 73°. The day being very hot, and the sun beating on the hard surface of the border, the thermometer rose by four o'clock to 76°. The night being mild, nothing was done to the border, but next morning the thermometer was 59°. A hot day succeeded, and the glass in the border indicated 75° in the afternoon. Dry litter was thrown over the black-surfaced border at a little past four, and, though the two nights were as much alike as two peas, the thermometer in the morning was at 70°. The hard, firm cake on the surface was removed, and the points of a fork used to make the surface of the border a little roughish and open, and then the day's sun had so little power on the loose surface that the thermometer fell to 60°, though it became a little lower at night by radiation. The thermometer gradually rose to 70° and upwards in the very hot days, and then, on the change of weather, as gradually declined. The rough, open surface lessened the absorbing and conducting-of-heat power of the border, and at the same time the rough, loose surface lessened the radiation of heat from it, and the cooling which would have been the consequence of evaporation if the surface had been moist.

The young gardeners who advocated that the more open and porous a soil is, the greater will it be heated, gave as their most powerful argument that the heated air would thus find access to it. And this would be true so far, and would exercise a beneficial influence as respects warmth when the soil was much colder than the air; but the case of our correspondent presupposes a gain of extra heat, and the problem for the young gardeners' solution was the difference, as respects getting warmed, between loose soil and firm soil in summer; and here, on the principle that bodies, as a general rule, conduct heat in proportion to their solidity, would they be prepared to say that the firm, unmoved soil would become the hottest. Our general practice is in consistence with this rule. In these warm days, whatever we may like for the tops and branches, we have no desire to get much more heat in the soil and at the roots, and hence we keep the hoe or the fork stirring the surface, to prevent the sun acting on a level, plane, firm surface, which would thus at one and the same time increase the heat in the soil and carry off its moisture quickly by a rapid evaporation. The stirring just keeps the moisture in and the heat out in much the same manner as if we put a mat or other coverlet over the ground.

Then how account for the seeming anomaly in our

correspondent's case as respects the slates on his border? If these slates were firmly fixed in the border, and no interstices between them and the soil, I should expect the soil, say one or two inches beneath them, to be hotter during the day than soil at a similar depth below a common border. I should not expect it to be so hot as on the surface of the uncovered border. If the slates were merely laid on the border, and there were open spaces beneath them, so that the air played freely, or was even confined between the slate and the soil, then, however warm the slate, I should not expect much of that heat to get into the earth, as in the one case the channel of its conduction was broken off, and in the second case, in addition to that, there were channels of confined air, the best of all mediums for arresting the transmission of heat.

From what has already been said our correspondent will also perceive that what he gains by such a dark surface during the day will be lost again by increased radiation of heat from that surface at night, unless means of protection are taken to arrest that radiation. When this is done we may find great benefit in black-coloured walls, and even without protection when the things cultivated require great heat during the day and no great reflection of light; but at present, unless these countervailing antidotes are at hand, we cannot gain much heat merely by using colours which absorb it most freely, as they radiate as freely. Such slates, in fine, will not answer the purpose of the concrete or the tar unless they are so put on as to exclude wet.

With the exception of the border alluded to I have done little in the way of surface concreting. I should be glad if some of our experienced brethren would give us the results of their trials. My attention was first directed to it by noticing the wonderful fertility and the curbed luxuriance of fruit trees against houses, the soil on which the roots grew being completely flagged over. We have yet much to learn between fertility and luxuriance. There is a Cabbage plant we wish to produce seed as soon as possible. Well, we make the ground hard about it to throw off even the rains, and this studied neglect forces the plant, in the struggle between existence and starvation, to throw up its flower-stem for the continuance of the race. But in general we do not grow the Cabbage for its seed, but for its fleshy, succulent leaves, and therefore we stir the soil about it, that the rains may enter the soil, that we may water at pleasure, and thus the air may keep up those processes of decomposition in the soil of organised material, that the roots may absorb nourishing substances; and we continue this stirring in summer, that the soil may not become too hot, or be dried up by an unobstructed evaporation. It may one day be thoroughly seen that a midway path between the extremes of the two Cabbages would suit most fruit trees.

R. FISH.

MELON CULTURE.

ALTHOUGH it is somewhat late to chat about Melons, yet I have a sufficient apology in the fact that it is impossible for any weekly periodical on gardening matters to offer simply articles specially adapted to the period when they appear.

But there are those that cultivate late Melons who can enjoy a good *Orion*, a *Snow's Green-flesh*, a *Beechwood*, or a genteel and delicate *Persian*, as well in October and November as in June. When we take into consideration the length of time that the Melon can be had in perfection on the dessert table it will readily appear a most important affair, and, in point of utility, almost ranks with Grapes and Pines. Certainly not so many can enjoy the Melon as well as the Grape, and not

so frequently; but then, as to mere decorative matters, what an important addition to a fine dessert! How bold, imposing, and dignified a noble Melon appears! How distinctive in character!

HABITS OF GROWTH IN MELONS.—All kinds do not grow precisely alike; yet there are quite sufficient points in common to generalise them. The common practice in frames or pits is to suffer the main shoots to extend nearly to the sides of the frame before pinching them. This is good practice. Now these leaders, if the plants be right, should forthwith push out lateral blossom-shoots, and the blooms being carefully impregnated the moment they appear, a flourishing crop should be the result; but when Melons are excited into a gross habit betimes, producing an invincible coarseness, these first laterals are not unfrequently barren, and when such is the case in a close frame no thorough success may be expected afterwards. These barren lateral shoots have to be pinched, and this produces such a host of shoots, and consequently foliage, that the whole speedily becomes confusion. There can be no doubt of the necessity of using such composts as will keep them moderate and of firm growth until the crop is set. This leads me to speak of *soil* in Melon culture.

It is an old maxim with good gardeners to use a strong or adhesive loam in preference to soils of a light character or rich in *humus*. The experience of many years tells in favour of this practice—there cannot be room for doubt on the subject. I have certainly known good Melons produced in pits where early Potatoes had been grown, in a compost of which one-half, at least, was rotten leaves; but then such pits were roomy, and the immense development of foliage which could be encouraged doubtless contributed to their success. Some of the best Melon growers I have ever known use the strongest and most adhesive loams, and these tossed into the frame or pit in a coarse state, and trod as firm as possible. And here I would direct the particular attention of the tyro in Melon culture to the difference between treading dry soils and those which are damp or wet. Our great Melon gardeners are not the men to use soils in a wet condition—certainly not to tread them.

But one thing may be named as to the loamy soils of professed gardeners. They are very frequently turfy, and turfy loam chopped rather coarsely may be trodden in almost any condition. However, let me observe that if the loamy soil be coarse and pretty dry it may be trodden as hard as the feet can make it for Melons. What is wanted is an enduring root action, not one sudden and excessive. When such Melon soils can be obtained it is my firm opinion that there needs not a particle of manurial matter. If the loam is suspected of being hungry, why, a little old leaf soil would perhaps prove a benefit. Still let it be borne in mind that the power of the soil should be controlled by the capacity of the frame or pit as to area; it is of little use, nay, a positive damage, to provide an over-amount of nutriment.

I will now offer a few observations on the character of the surrounding *air* in the Melon pit or frame. As to temperature, there is no doubt that the Melon requires one a little higher in the main than that commonly allotted to the Cucumber, or at least it will not thrive in so low a one. Melons should never have less than 65°, and they will enjoy nearly 90° during sunshine, provided the ventilation is liberal: 75° may be quoted as a favourite pitch with them in the daytime. Then, as to air moisture, some persons have recommended a very dry condition of air; but they enjoy a liberal amount of air moisture from the planting out to the completion of their first swelling. After this there can be no doubt of their requiring a much drier condition of air, in order that the elaborative powers of the foliage may have fair play. The air may be kept in a

nice mellow condition by sprinkling lightly with the water-pot or syringe early in the afternoon, or occasionally before breakfast time, in hot and sunny weather.

I may now offer a few remarks on the *watering* of Melons, for this is an important consideration. Whilst in a young state they require a tolerably moist soil, enough moisture to encourage a free and healthy growth; but towards blossoming time, when, in order to encourage the impregnation of the blossoms, they should be suffered to become dry on the surface of the bed at least, sprinklings should be entirely refrained from until the crop is set and swelling. When a crop is insured the sprinkling or syringing may be again resumed as needed until the fruits are as large as an egg, and appear thriving, when, being dry at the root, they should have a thorough watering; and manure water will be found of much advantage. Perhaps a second good watering will be necessary in two or three weeks afterwards, with which most good cultivators are satisfied, excepting an occasional sprinkling. Some gardeners would doubtless object to so much sprinkling as I have recommended; and, indeed, I have known first-rate Melons grown with a very small amount of attention as to sprinkling. The practice here recommended is, however, somewhat modified by a dread which all Melon growers feel in common—that of a visit from that insidious scoundrel, the red spider. If we could be assured against the chances of his visitation, and that of the thrips, with another enemy or two which revel in a dry atmosphere, I should be more cautious in my recommendations of water; but since we have no Melon Insurance Societies I recommend the water as a preventive.

The *ripening* of Melons requires consideration. We all know that these are great exhibition times, and that the character and quality of our fruits are affected thereby. It is not particularly easy for our grooms to train a horse to a day for the Derby or St. Leger: just so with fruits and flowers. And thus it is, doubtless, that the flavour of many fruits on our exhibition tables does not come up to the expectations that might have been previously formed of them, judging by size and appearance. Therefore Melons hurried forward for special purposes cannot be expected to possess that intensity of flavour which is a characteristic of those which have been well ventilated, and, as a consequence, have had more time to feed, to use a gardening phrase. A liberal ventilation, therefore, contributes much to the depth of flesh and flavour of Melons. And thus it is with forced Peaches. A good Peach forcer will give his ripening house air night and day when they are ripening; Melons the same. Let anybody try one frame against another under such circumstances at any time from June to September, and I will answer for it that the slow ripeners, other conditions being equal, will be the best approved.

I must here offer a few observations on those insect enemies which usually beset the Melon; and first the *red spider*. This is the chief pest of the Melon; all the other insects are as nothing compared with this. If it be allowed to prevail let not success for a moment be dreamed of. There are two preventives, if not destructive, in common use amongst gardeners—sulphur and frequent syringing. Now, the application of these two at once is not very convenient; the syringe will dash the sulphur off and waste it, and to mix sulphur with the water at each syringing is but a wasteful proceeding. I consider it the best plan to use the syringe freely up to the blossoming period, and afterwards to use sulphur occasionally, powdering it finely over the whole surface of the plants in a highly divided state. Sulphur may be thus freely applied just on the heels of the liberal watering recommended when the fruits are as large as eggs; and, as they will not require water again for a

fortnight or more, the sulphur will have plenty of time to act before the next watering. Besides this, the sides of the frame or pit may have a thin wash of lime and sulphur; but the frame had better be shaded a day or two on the operation being performed, as the fumes may prove too strong at first.

There is a *thrips* which is very troublesome to Melons, and a most awkward customer. For this, as the spider, preventive measures are best. The sulphur is not well approved of by this insect; but I believe tobacco fumigations, combined with the sulphuring, have a powerful effect on this foe.

R. ERRINGTON.

PLANTS SUITABLE FOR VASES AND WINDOW BOXES.

PLENTIFUL as summer-flowering plants are, and their numbers continually increasing, those that are really adapted to vases and small window boxes are comparatively few. This assertion may seem strange to those who have seen the beautiful vases and baskets at the Crystal Palace; yet, I repeat, the number of those really adapted to be grown in the majority of vases to be found at villa and other places is very small. The reason is obvious enough, and may not have been fully explained to those who only see the large vases at the Crystal Palace and other places in their best garb, which it is needless to say is as near perfection itself as any approach by artificial means can well be. But there are very few vases like those of the Crystal Palace. Deep and capacious, they contain within their ample bowl earth enough to supply the plants that grow therein with sufficient food and moisture for a long time. Not so the little shallow ones known as Grecian tazza, or by what other name soever they are pleased to call them. Most plants require a considerable space to grow well in, and though some, as Orchids and succulents, exist more on what they derive from the atmosphere than on what their roots pasture in, such plants are not adapted for vases.

It ought also to be fully understood by those who only see the large vases mentioned above when at their best that the plants which ornament them are seldom grown there, but are brought from other reserves to furnish them, and, when no longer ornamental, are exchanged for others in a more vigorous state. This is more especially the case with basket flowers, which are, in fact, nothing more nor less than potted flowering plants arranged in the best manner for effect.

This is all very easily managed when there is a large store of things to go to; but the amateur who has only two or three vases, so small as, perhaps, not to hold more than a couple of gallons, must not expect plants in these to look so well as those holding as many barrow-loads; and, as such vases are often only once planted during the summer, the best way in which to do that is, perhaps, a subject worth knowing, or rather, the description of plants to do it with is a matter worth considering beforehand.

As I have stated before, the number of plants really suitable for small vases is few. I will here give my reasons why. Most plants to do well require more space than they can have in a vase, and to depend on liquid food alone is a very precarious way, and too artificial to continue long with a good result. On that account I therefore discard many of the most ornamental plants from vases, because they are too luxurious livers to do well on such limited means. *Fuchsias*, which are as ornamental as any class of flowers can be to elevate on a level with or above the eye, are too greedy to do well in a confined space. *Verbenas* are also beautiful when well done; but they, too, are expensive, and soon cease to flower well if not well fed. The same may be said of *Petunia*, *Gaillardia*, and *Calceolaria*, although the latter

will flower well when first planted out, but the lack of after-growth soon makes them cease. Many other plants might be added to this list, but enough has been said to explain the reason why such plants do not answer. It will now be right to turn to those which are more suitable, and to make a few remarks on each.

GERANIUM, IVY-LEAVED.—The scarlet of this class is certainly the best plant I have for vases, requiring but little room, and not so likely to flag for want of water as many others, and its glossy green leaves seem more garnished with flowers when in a confined quarter than when more at large. I have put it first on the list for such purposes. Other kinds of Ivy-leaved ones are also good, but none better than the above.

GERANIUM, SCARLET.—These do very well in a general way when regularly and well watered. *Tom Thumb* is yet a useful member of this class. A rich soil will keep them in good order a long time, and they flower well.

GERANIUM, VARIEGATED.—I like *Mangles' Pink* better than the more upright-growing ones, and being a free grower, and not over-greedy of much room, I think it one of the best plants we have for vases and small boxes.

GERANIUM, OAK-LEAVED VARIETIES.—There are few of these which do not like a rich soil and plenty of it better than a limited space, but they flower better by being confined. The *White Unique* and *Shrubland Pet*, varieties widely different, answer best, the latter being, in fact, a very pretty object, one that I often make a centre plant of, and I might add that nothing makes a more compact, neat bed than this, with an edging of white *Alyssum* round it; but I may at a future time explain how this is managed.

CUPHEA PLATYCENTRA.—This ornamental plant answers very well in a vase or box, and its flowers seem the more pretty by being brought on a level with the eye; its leaves are also pretty.

CINERARIA MARITIMA.—This plant is perhaps the most useful one of all, for its silvery white leaves contrast so well with whatever is around it, that it is seldom out of place. It also stands the winter, and, in fact, looks well at all times, a desideratum not to be overlooked where there is not the means of exchanging plants so often as is done in some public gardens and other places in high keeping.

MESEMBRYANTHEMUMS.—There are several species which look remarkably well and flower more freely in vases than in the open ground. *Insigne* is one of the best I have, but there are several others nearly as good. They have also the good property of not suffering much if not regularly watered. This is important when perhaps that article cannot always be insured as forthcoming. Some window boxes and other places are accessible only to certain parties whose other duties may be such as often to cause them to forget the flowers, and many of our most showy ones would perish in consequence, but this interesting section requires but little of that elementary fluid.

LOPHOSPERMUM.—This certainly thrives best when liberally dealt with, but it will do in a cramped place. *Hendersonii* is better than *scandens*.

LOBELIA ERINUS and its varieties certainly like better treatment than to be crammed into a small compass along with other things more robust than themselves; but where a blue flowering plant is wanted of low growth, this is assuredly better than any of the *Verbenas*.

ALYSSUM VARIEGATUM.—This will do very well, but when the vase or box itself is white, or nearly so, it will be out of place. It is needless, however, saying that it does better in an open bed.

In giving the above short list I by no means aver that they are the only ones adapted to vases, &c. My purpose is only to assist those who have some of these orna-

mental appendages to fill, and have not time or plants to fill them oftener than once during the summer. This is a different thing from stocking them as often as they get shabby from an ample store or reserve. In the latter case plants only flower in their ornamental quarters, and are grown elsewhere; but an amateur having no such means wishes for a something that will last a long time without further trouble. I may also add that the exposed, and, in some cases, difficult-of-access places in which many of these ornamental objects are situated, render it no easy matter to furnish them with water in sufficient quantity to meet the wants of all plants that might otherwise do. Thus it is not advisable to plant such as will take harm by its occasional neglect; and, though hanging, drooping plants look well where they can be introduced, it is next to impossible to get them to look well in exposed, windy situations: one side, the leeward, may possibly escape, but uniformity is not maintained by so doing. Inside a house plants can be coaxed into any position; outside they assume a certain amount of independence of action in spite of all the skill and management brought to bear in the matter, although it must be admitted that well-directed industry has done much to counteract certain tendencies in plants which have been pronounced defects in their character.

J. ROBSON.

NOTES FROM THE CONTINENT.—No. 6.

BERLIN.

THE Society for the Promotion of Horticulture in Prussia gave their principal Exhibition of the season on Sunday and Monday, the 21st and 22nd of June. Tickets were, as usual, free, and to be obtained only from the members of the Society. The highest prize offered was twenty dollars, equal to £3 English money. The Show was held in the Royal Riding School, which was fitted up for the occasion. In all matters of taste—from the decoration of a city to the making of a simple bouquet, from the erection of a monument to the designing of a brooch—the Germans are decidedly in advance of the English; and the first glance on entering the Flower Show gave a proof of this assertion. The floor was laid with turf, and a sanded walk ran round by the stages, which occupied three sides of the place. In the centre was a pretty little brass fountain, which, through the senses of both sight and hearing, gave a freshness to the scene which was very refreshing after a walk in the hot, dry streets. Tasteful groups of plants stood at intervals upon the turf, and splendidly-composed bouquets stood here and there upon marble pedestals. At the end of the room was a platform a few steps above the level of the floor, behind which, rising shelf above shelf, were arranged Palms, Ferns, Philodendrons, large Myrtles, *Dracenas*, &c., producing, by the variety and contrast of their foliage, a most charming effect, which was heightened by three pure white marble busts of members of the royal family which stood among them. Above the door hung a large basket of rustic-work, in which was a fine plant of *Polypodium Reinwardtii*, whose drooping fronds were five or six feet long. There were some fine healthy standard Orange trees from the palace garden of Charlottenburg, and most of the best gardens in the neighbourhood, including the Botanic, had sent collections of plants; but, instead of each contributor's specimens being kept distinct, they were arranged rather for the general effect. There were some *Ranunculus* flowers from Holland, and Mr. Linden, of Brussels, had sent a dozen new plants, among which was a new *Begonia* well worth a journey of some miles to see; it was called *B. rex*, and was introduced last year from Assam. Its leaves are shaped like those of *B. xanthia*, but have more substance in them; they are also of nearly the same colour, with the addition of a well-defined greyish-white zone running round each leaf intermediate between the midrib and the margin; it was not in flower. It would appear to be, like *B. picta*, a stemless species. A new species of the plant from which the Chinese manufacture their celebrated grass-cloth, called *Bahmeria*

argentea; its leaves were pale green, mottled with white. A fine plant, called *Cyanophyllum magnificum*, with noble ovate-lanceolate leaves a foot long, and of a crimson colour on the under side. It came last year from Chiapas, in South America. *Campylobotrys argyroneura*, a beautiful crimson-tinted, velvety-looking plant, and several new species of *Maranta*, very pretty, but not so good as those already in cultivation; the best was *M. pulchella*, with whitish stripes. The beautiful new striped variety of *Tradescantia discolor* was sent from a garden near Potsdam, and with it some other good plants, including a small collection of Aroidæ. The Orchids were remarkably small specimens; the most interesting was an open air species, *Cypripedium spectabile*; it was freely flowered.

Of the fruit department I can say but little. There were three Pines, neither of which would weigh a pound and a half; a few dishes of Strawberries (Mammoth and Princess Alice), small, but beautifully coloured, and of a fine flavour; one dish of a very small-berried sort of white Grape; a few Plums, and so on. The vegetables were few, and still more uninteresting.—KARL.

CALEDONIAN HORTICULTURAL SOCIETY'S SHOW AT EDINBURGH.

THIS Society's June Exhibition was held in the Experimental Garden, Inverleith Row, on Saturday, the 27th. The day was beautiful, the productions excellent, but the attendance thin, which is always a hinderance to the success of our Shows during summer.

Stove and greenhouse plants, although not numerous, were really fine specimens. In the collection presented by Mr. Blair, gardener, Mavies Bank, which gained the first prize, was a remarkably fine plant of *Hoya bella*, nearly three feet high, and as much through. His *Statice Halfordi*, *Ixora coccinea*, *Aphelexis macrantha purpurea*, *Clerodendrum Kämpferi*, *Æschynanthus speciosus*, and *Tetralthea verticillata* were all examples of careful cultivation.

Fancy *Geraniums* were in excellent condition. The first prize for large specimens was awarded to Mr. Stewart, Dalhousie Castle, and for those grown in six-inch pots to Mr. Henderson, gardener to G. K. Sievwright, Esq.

Fuchsias were nicely bloomed, and showed a great improvement on the over-luxuriant foliage and huge plants of former years, every flower being seen to advantage.

Calceolarias and *Phloxes* in pots, which seem to be favourites here, were well managed. The latter are amongst our showiest plants out of doors, and would be no less ornamental for the greenhouse could we only induce them to keep more dwarf.

Cut blooms of *Roses* were numerous and generally good. Mr. Bust, Tynningham, who was foremost on the prize-list, had large and perfect blooms of *Adam*, *Abericote*, *Triomphe de Paris*, *Reine des Fleurs*, *Louise Peronnay*, *Jules Margottin*, and *Général Jacqueminot*.

Plants sent for exhibition only constituted the larger portion of the Show. Amongst these were a magnificent specimen of *Stanhopea oculata* from Mr. Blair, Mavies Bank, and a well-managed *Leptodactylon Californicum* from Mr. Paterson, gardener to Professor Syme, showing what this plant may be under skilful cultivation.

Messrs. Cunningham, Fraser, and Co., Comley Bank, showed twenty-four blooms of the large red Rose, *Souvenir d'un Ami*, and forty-eight other sorts in fine condition, amongst which were *Leveson Gower*, *Paul Ricaut*, *Général Lamoricière*, *Coupe de Hêbe*, *Smith's Yellow*, *La Reine*, *Melanie Willermosch*, &c. Messrs. Downie and Laird had two fine specimens of *Phlox Addisoni*; *Calceolaria Gem*, a good variety for bedding; a stand of fine *Verbenas*, and miscellaneous soft-wooded plants. Mr. R. M. Stark, Edgehill Nursery, had a varied collection, consisting of greenhouse, stove, herbaceous, and alpine plants, and from fifty to sixty of the prettiest exotic *Ferns*, pretending more of novelty and variety than size of specimens. Amongst the alpines were *Orchis foliosa*, *Lychnis Pyrenaica*, *Astrantia minor*, *Cypripedium spectabile*, *Linaria organifolia*, *Helenium Hallerii*, and a well-bloomed *Dianthus alpinus*, the best of the many beautiful alpines of June. From the same establishment

came a neat plant of the delicate *Todea pellucida*, and the powdered *Gymnogramma Peruviana argyrophylla*, *Pteris aspericaulis*, *P. scaberula*, *Onychium auratum*, *Platyloma flexuosa*, *P. ternifolia*, *Gompholobium appendiculatum*; *Cheilanthes frigida*, *C. viscosa*, both elegant Ferns in the way of *lindigera*; *C. Alabamensis* and *C. micromera* formed a beautiful section in this group, while *C. hirta Ellisiana* stood at the head of another division.

The best plant of *Linum grandiflorum rubrum* that we have seen came from Mr. C. Alexander, Seedsman, Register Street. Masses of beautiful Stocks were exhibited, principally *Bromptons*, and a crimson variety called *Young's Intermediate*, which seems the most useful for general purposes.—R.

NEW AND RARE PLANTS.

PUYA VIRESCENS (*Greenish-flowered Puya*).

Probably a native of Venezuela or New Grenada. Flowers in the stove in March.—(*Botanical Magazine*, t. 4991.)

RHODODENDRON VEITCHIANUM (*Veitch's Rhododendron*).

This noble and very distinct species was imported by Messrs. Veitch from Moulmein, on the eastern shore of the Bay of Bengal. Mr. Beaton thus spoke of it at page 83 of our present volume, when commenting on the plants at the Horticultural Society's Show in May: "Mr. Veitch had the best-habited new *Rhododendron* we have had since *Javanicum*, a stiff, sturdy, stocky, close-jointed plant, with smooth, thick leaves, and as thick as they are long, and silvery beneath. The flowers come in threes; they are as large as, and of a clearer white than, those of *formosum*, and they are frilled on the edges like *Azalea crispiflora*, or rather more so. It is from Moulmein, a range in the Malay peninsula, next to Birmah, and, therefore, like *jasminiflorum* and *Javanicum*, it must have a greenhouse."—(*Ibid.* t. 4992.)

DENDROBIUM CREPIDATUM (*Slippered Dendrobium*).

A very beautiful Orchid, native of India, and "probably of Assam or Khasya Hills, in Eastern Bengal." Blooms in April. Flowers white, tinged with pink, and lip blotched with yellow.—(*Ibid.* t. 4993.)

DORONICUM BOURGÆI (*Bourgeau's Leopard's Bane*).

Found by M. Bourgeau during 1855 at Barranco de Angostura, in the Canary Islands. It closely resembles the *Cineraria*, and is "a highly ornamental greenhouse plant, flowering during the spring months." The ray florets are lilac, and the disk purple, studded with the golden-coloured anthers.—(*Ibid.* t. 4994.)

FORSYTHIA SUSPensa (*Pendulous Forsythia*).

It is the *Kengjo* of Kämpfer, *Syringa suspensa* of Thunberg, and *Lilac perperse* of Lamarck. It was introduced from Japan in 1833 by Mr. Verkerk Pistorius, but has only recently been cultivated in England. Messrs. Veitch seem to be its first cultivators here, and sent flowering specimens to Kew in April of the present year. Its flowers are yellow, and "larger and handsomer than those of *F. viridissima*."—(*Ibid.* t. 4995.)

CIRRHOPE TALUM CUMINGII (*Mr. Cuming's Cirrhopetalum*).

Messrs. Loddiges flowered this very lovely Orchid in 1841. It was imported from the Philippine Islands by Mr. Cuming. Flowers crimson and purple. Blooms in spring.—(*Ibid.* t. 4996.)

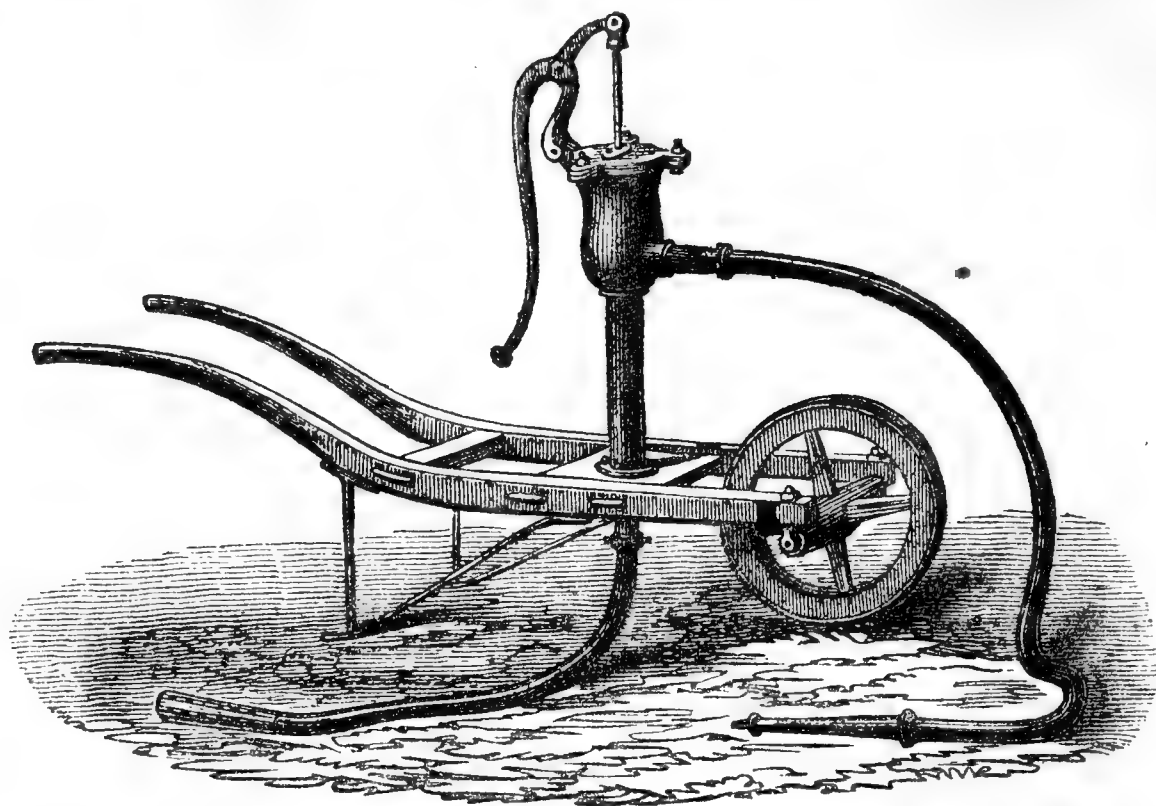
FLEUR'S CASTLE.—Mr. Rose, foreman to Mr. Thomson at Dalkeith Palace, is appointed head gardener to his Grace the Duke of Roxburgh at Fleur's Castle, the gardenership being vacant by the death of Mr. Pillans. Extensive improvements are in contemplation, which will now place the gardens on a scale harmonising with that princely mansion.

IMPLEMENTS AND OTHER CONSTRUCTIONS SUITED FOR GARDENS.

EXHIBITED AT THE HORTICULTURAL SOCIETY'S SHOW AT CHISWICK.

(Continued from page 237.)

MESSRS. WARNER AND SONS, Crescent, Jewin Street, London, exhibited, among other things, the following:—

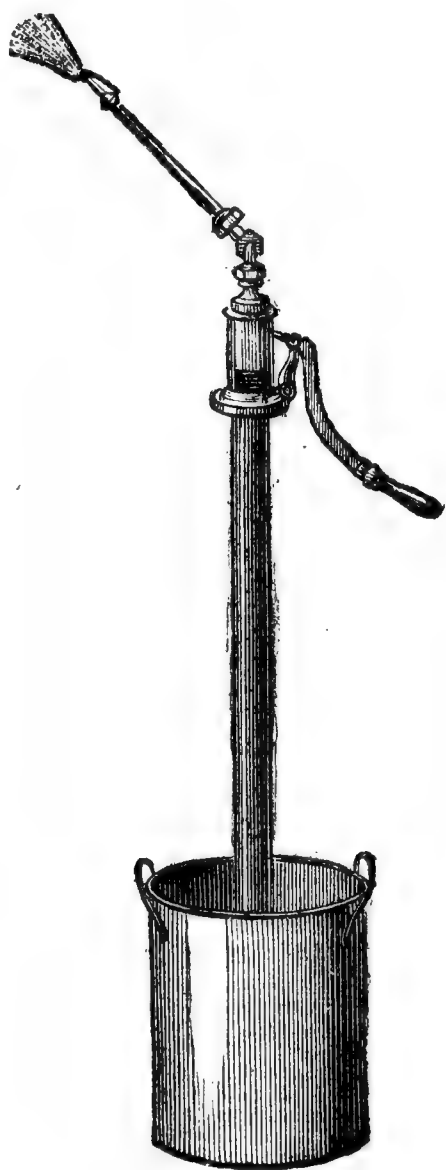


WARNER'S PATENT LIFT AND FORCE PUMP.—It is fitted with flexible suction and union nose joint, and is mounted on a strong wooden barrow, so as to be most available for

drawing and delivering water or liquid manure at different parts of the garden.

PORTABLE GARDEN ENGINE.—This is furnished with a

Watering Engine has a Registered Spreader for diffusing the



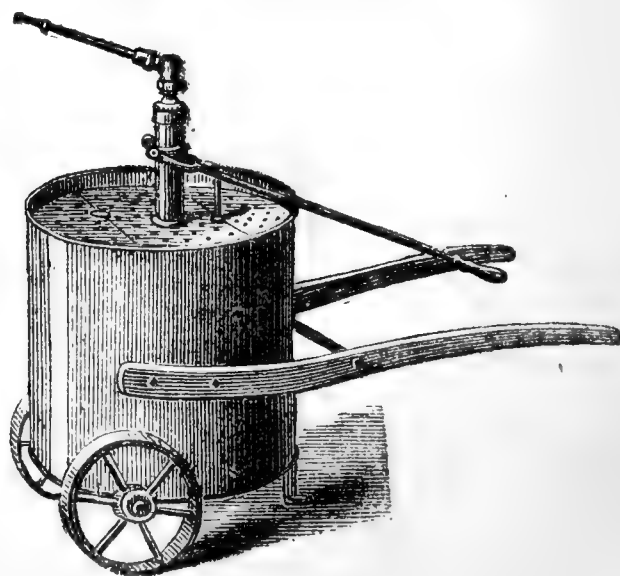
Registered Spreader for the wide diffusion of the water, and is worked from a galvanised iron pail, which is sold with it.

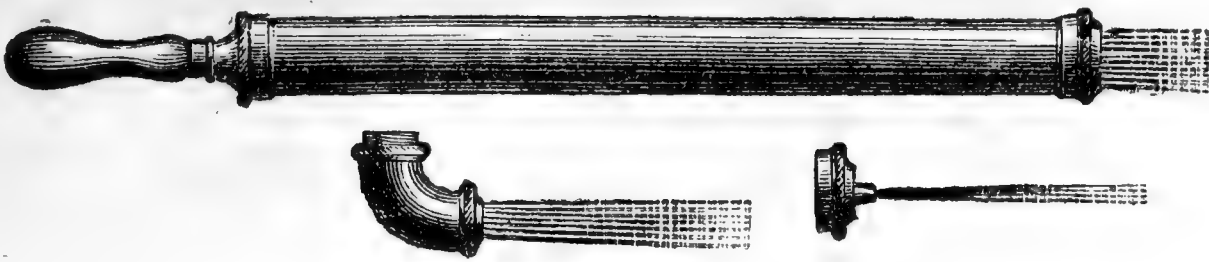
WARNER'S OAK TUB GARDEN ENGINE.—This most useful



water like a shower of rain, as well as a Spreader like that of the street watering-carts for watering walks and lawns.

SMALL TUB GARDEN ENGINE.—This holds ten gallons, and is fitted with a Registered Spreader.

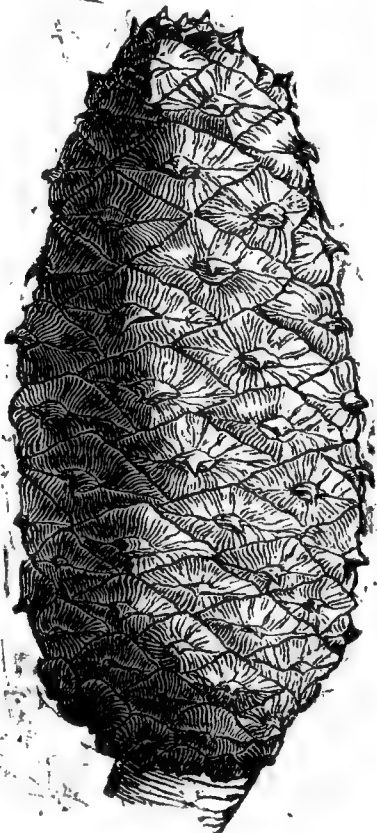




WARNER'S BRASS GARDEN SYRINGE, No. 2.—This is furnished with shifting nozzles, so that it can deliver the water more or less diffused or under the leaves as may be required.

PINUS ROYLEANA.

ALTHOUGH the seeds, cones, and a few loose leaves of this plant are all that have as yet reached Europe, there is no doubt that it forms a species previously quite unknown. The leaves are like those of the Scotch Fir in almost all particulars, except that they are much more slender and short; and the cones, of the size of *Pinus sylvestris*, have an entirely different form, are smooth as if they had been half polished, and their scales are flat-headed, with a fine, hard, sharp mucro, very distinctly hooked back—(much more uniformly than the artist has represented in the accompanying cut).



All that is known of its history is that the fragments above alluded to were received in 1853, from Dr. Jamieson, as belonging to a noble tree growing in Nepal at an altitude of 8—10,000 feet, and therefore perfectly hardy. A very few plants have been raised in the Garden, where they prove to be, in their seedling state, quite different from any species previously raised there. The following is Mr. Gordon's description of the materials received from Dr. Royle:—

“*Leaves* two in a sheath, rather spreading, from 2 to 2½ inches in length, rather broad, stiff, blunt-pointed, partially twisted, concave on the upper surface, and light glaucous green. *Sheaths* very short, particularly on the adult leaves, ragged or torn, and partially persistent.

“*Cones* 2½ inches in length, and 1 inch broad in the middle, of a greyish-brown colour, oblong-conical, slightly tapering to the base, and rather blunt-pointed. *Scales* smallest and most numerous near the base, and largest near the middle, slightly elevated in the centre, and terminating in an irregular four-sided projecting hooked point, slightly bent backwards.

“*Seeds* very small, with a broadish wing, rather more than half an inch in length.

“*Seed leaves* on the young plants mostly in sixes, and rather long.

“The Society received seeds of this Pine from the Honourable Court of Directors of the East India Company in April, 1853; but, as very few seeds grew, it must continue to be scarce for some time. It certainly is new to our collections. Previously we had no Pine from India with only

two leaves in a sheath, and very small cones.”—(*Horticultural Society's Journal*.)

[Since the above was published it seems to be proved that Dr. Jamieson was deceived, and that the cones and specimens were from a Pine introduced into India from the United States, and that it is the *Pinus inops*, or New Jersey Pine, sometimes called *Pinus intermedia* and *P. Virginiana*. It attains a height of about forty-five feet.—ED. C. G.]

WHITE BEDDING PLANTS.

I WISH that you could tell us gardeners of some good white bedding plants. For a pink I have got *Saponaria Calabrica*, than which nothing can possibly be better. For a blue I have a hardy thing which came to me without a name, but which I believe to be *Lavandula dentata*. This is one of the very best things that I have seen anywhere, a profuse bloomer, of an exquisite colour and long continuance, easy to strike, and perfectly hardy. For a yellow I have *Calceolarias* of all shades and Musk. For a white I have nothing that quite answers my purpose. *Geranium Hendersonii* is the nearest to it. It has done well with me this year. *Verbenas* are not tall enough for my purpose. *Clarkias*, *Candytufts*, and *Sweet Alyssum* are not lasting enough.

Can you tell us of anything white as good, as easy to manage, and as cheap as the *Saponaria*, the *Mint*, and some other things which you have recommended, and which the gardening world has almost universally adopted?

Please to say if the *Perilla Nankinensis* is hardy. [It should be hardy, but we cannot say if it is or not.]—JAMES THOMPSON.

[Your exquisite blue bedder can hardly be *Lavandula dentata*, which is a stiff, Tansy-leaved plant, with upright, imbricated spikes of pale white flowers. Pray send a fair specimen of it for examination. A friend of ours has the best white bed in his garden of the double white *Petunia imperialis* after all. It is planted in pots—32's in the centre, and 48's all round. Our own best white bed at present is *Virgineum* *Geranium*; but will it bloom freely in the autumn, and keep from going too much to leaves? *Duchess of Sutherland* makes a beautiful whitish bed so far, and the same with *Glaucum grandiflorum* *Geranium*. There are several white scarlet bedders better than *Hendersonii*, but without names. We have the *Blushing Bride* on trial just now; also a pure white ivory *Nosegay* which promises well, and another white *Geranium* of the scarlet race is just come in with a high character. Out of them all, and from our own look out, we shall be able to lay the best of all colours before you for the next start.]

EMIGRATION OF BEES.

I AM not quite sure that the law, as laid down in THE COTTAGE GARDENER of July 7th, regarding the emigration of bees, will meet every case. It says, “That if bees have been quickly followed from the hive whence they swarmed, and have never been lost sight of, their owner is entitled to follow them on to another man's land and hive them;” and further, “No one who is honest will prevent the owner of a strayed swarm following and recovering it.”

Now, my neighbour, who lives rather more than a quarter of a mile distant, called upon me the other day in a state of

perturbation to say that a swarm of his bees, which he and his man had been following, had just entered one of my hives. He did not like to lose them, and was desirous to know how he should act. I told him that he was heartily welcome to the bees if he could devise any plan of separating them from the stock which they had joined; but this, upon consulting with his man, it appeared could not be effected. Still he did not relish giving them up, and I felt reluctant to part with my bees, hive, and comb. After a little friendly discussion we agreed, without the aid of Blackstone, that as there were probably two queens in the hive, they might swarm again, and if they did in the course of the summer or autumn the swarm was to be *his*, but if not they were to remain with *me* and take their chance. It may be well to state that for some time previously my bees had been attacked by marauders, and great numbers slain. Still the remnant kept possession of the hive, and I have good reason to believe *now* that the said marauders were my neighbour's bees, and that, having so far succeeded, they completed their conquest by taking possession in the character of a new swarm. This was about a fortnight since, and up to the present time they have been working well.

Have we decided right, or will the Editor incline to quash our decision and give us a new rule?—S. P., *Rushmere*.

N.B. It occurs to me that Blackstone lays it down as a legal axiom, that "*property has rights*;" but I cannot just now call to mind where he maintains that *animals have any*. If he does, what influence, as a third party, should they have in the settlement of the above question?

[It is highly probable that, if the bees have "rights," and were called upon to defend them, they would give a stinging reply. Be this as it may, they would not succeed in any endeavour to make us reverse our correspondent's decision, for it is the best equity that could be administered under the circumstances.—Ed. C. G.]

LIST OF SUPERIOR PELARGONIUMS.

MR. APPLEBY gave lately a list of Pelargoniums which we think ought to have suited "AN OLD SUBSCRIBER'S" case exactly. However, as we are even more desirous to answer old subscribers than new ones, we give below an answer to our old supporter's several queries, selecting only such good kinds as are moderate in price.

TWENTY-FOUR OF THE BEST OLDER VARIETIES.

1. *Andover*.—Upper petals velvety black, lower petals rose.
2. *Bride of Abydos*.—Upper petals crimson, lower petals pure white.
3. *Carlos*.—Upper petals maroon; lower petals rose, spotted with white.
4. *Conqueror*.—Scarlet upper petals, lower petals orange scarlet.
5. *Duchess of Wellington*.—Upper petals dark chocolate, lower petals lilac.
6. *Empress*.—Upper petals crimson, lower petals vermilion.
7. *Fair Ellen*.—Lower petals white; upper petals dark blotch, shaded with carmine, and margined with white.
8. *Gem of the West*.—General ground colour white, with claret spot on the upper petals.
9. *Governor General*.—Ground colour a glowing rose, with medium-sized black blotch on the upper petals.
10. *Laura*.—Ground colour purplish rose, with white centre, and small dark spot on the upper petals.
11. *Leah*.—Ground colour pinkish salmon, with deep crimson blotch on the upper petals, margined with bright rose.
12. *Lord Raglan*.—Bright orange scarlet ground colour, with dark spots on upper petals; distinct.
13. *Marginata*.—Ground colour purple, with black blotch on the upper petals.
14. *Novelty*.—Ground colour rosy crimson, strongly marked and veined with dark maroon.
15. *Painter Improved*.—Upper petals dark clouded crimson, margined with rosy purple; lower petals rosy purple, with a large spot of crimson on each.
16. *Phaeton*.—Ground colour orange; scarlet top petals, with a dark spot on each.

17. *Rebecca*.—Ground colour a rich cinnamon. Difficult to describe. Distinct.

18. *Sanspareil*.—Ground colour pale flesh, with a distinct spot on each of the five petals.

19. *Silenus*.—A distinct, clouded flower, the general or prevailing colour being a brownish crimson.

20. *Tête Noir*.—Ground colour shaded orange, with black spots on each of the five petals.

21. *Una*.—Ground colour white, with carmine spot on the top petals.

22. *Virginia*.—Ground colour white, with a large dark spot on each of the upper petals.

23. *Vulcan*.—Ground colour orange salmon, with clouded maroon spots on the upper petals.

24. *Yarico*.—Ground colour warm pink, with deep maroon blotch on each of the five petals.

TWELVE FANCY VARIETIES.

1. *Advancer*.—Upper petals rich mulberry, lower petals blush.

2. *Beauty of Slough*.—Upper petals bright rosy crimson, edged with white.

3. *Cloth of Silver*.—Ground colour a silvery white.

4. *Crimson King*.—Ground colour crimson purple, with lilac centre.

5. *Defiance*.—Ground colour dark maroon, with white centre and white margin.

6. *Duchess of Sutherland*.—Ground colour delicate clear flesh, with blotch of cherry on the upper petals.

7. *Eminent*.—Ground colour violet plum.

8. *Lady Hume Campbell*.—Ground colour bright crimson, with white centre.

9. *Masterpiece*.—Ground colour rich purple maroon, lower petals clouded with mulberry, centre light.

10. *Moonlight*.—Delicate lilac rose ground, white throat, and margined with white.

11. *Resplendens*.—Upper petals bright crimson, lower petals light, with a distinct spot of crimson on each.

12. *Victoria Magna*.—Ground colour white, with rose lilac blotch on the upper petals.

TWELVE FRENCH VARIETIES.

The colours of these continental varieties are so *bizarre*, so oddly and curiously intermixed, that it is impossible to describe them in moderate space. The twelve names given are all distinct from each other in colours.

1. Adèle Odier.

2. Dr. André.

3. Excelsior.

4. Gustave Odier.

5. Madame de Lamoricière.

6. Ninon de l'Enclos.

7. Monte Christo.

8. Napoleon.

9. Roi de Feu.

10. Triomphe de la Tours.

11. Verschaffeltii.

12. Vicomte de Walmer.

QUERIES AND ANSWERS.

LOTUS CORNICULATUS.—RIBBON BEDS.

"I, like the Irish doctor, am trying the *Lotus corniculatus flore-pleno* for an edging mixed with a small blue *Campanula*, of which I send a flower (*muralis*?), but fear the Lotus will not stand much wet weather. I am also getting up a stock of a lilac-shot *Pentstemon* for a neutral bed. It is hardy, a great point with me. I have a Primrose yellow as a Buttercup for spring edging; also a semi-double Oxlip, very bright yellow; a single plant of *Genista tinctoria flore-pleno*, which will, I think, be useful as a hardy plant for the second or third row of a ribbon."—K. W.

[There is no fear about the double *Lotus* standing "all weathers" after it gets a good hold of the soil, but it does not like to be often moved. The *Campanula* is related to *glomerata*, and is very likely the kind you suppose—*muralis*. The lilac *Pentstemon* is probably *pulchellum*, and all you will have to do is to cut off the flower-stems when the flowers are three parts gone; this will prevent seeding and prolong the flowering. Another of our correspondents has the yellow *Polyanthus*: would it cross with your Primrose?

We never heard of a double *Genista tinctoria* that we recollect, but it is very doubtful if it will answer as a line in

a ribbon; the single *tinctoria* would not answer, because it is not a perpetual or whole season bloomer. It must be a capital mixed border plant, but all ribbons should hold the colours till the frost comes.]

ANEMONE RANUNCULOIDES.—CYCLAMENS.— WHAT IS A WEED?

"You mention *Anemone ranunculoides* as a rare plant, and I believe that it is very rarely found as a wild plant in this country, if, indeed, it is indigenous; but in my garden, so far from being rare, it has become a weed. It propagates itself most rapidly by its roots, and I think also by seed. One side of a ditch, which forms one of the boundaries of my garden, is for several yards full of it. In one part of my garden *Cyclamen Coum* and *C. hederifolium* propagate themselves so freely that they almost come under the description of weeds. Different varieties, and, indeed, species of *Crocus* are with me most troublesome weeds, as is also *Anemone coronaria*, though the latter plant does not grow luxuriantly or bloom well with me, as the soil of my garden is rather gravelly and hot. I wish that you would give in THE COTTAGE GARDENER a definition of 'a weed.' I can think of no definition but the following, namely, 'A weed is a plant which grows where you wish it not to grow.'—E. SIMONS.

[The *Cyclamens* and *Crocuses* must propagate from self-sown seeds. How wrong it seems to keep these kinds of *Cyclamens* half-starved in pots as most gardeners do. Your own definition of a weed is complete. The best wheat in Norfolk would be a weed in a turnip field.]

GOLDEN STONECROP.—PLANTS FOR VASE EDGINGS.

"'ABEL NOTT' begs the Editor's acceptance of a few plants of the 'Golden Stonecrop,' gathered from a bank by the roadside in this neighbourhood. About this time last summer Abel planted a little of it in a vase some twenty inches diameter, and it is now a perfect cloth of gold, the brilliance of the tint being due to the blossom, which completely covers the surface, so much so that he could not put the tip of his finger in a void place. Another vase opposite forms a sad contrast to this, Abel having in vain tried to get some plant of similar habit to the Stonecrop, but of different colour—blue or white by preference—and to bloom at the same time. He is just about sowing seeds on trial of *Arabis lucida*, *Aubrietia deltoidea*, *Sedum Anglicum*, and *S. cæruleum*. Can the Editor help him? Abel thinks, too, that if he could get some plant of a dark green foliage to plant round the edge of the vases, and to hang down over their sides, it would be a nice relief to the all bloom above; but he has found that two families in a house do not always agree. One is apt to monopolise all the room, and all the food too."

[Yours is not the *Golden Stonecrop*, but the common *Sedum acre*, and its flowers give the "cloth of gold" as you say; but the *Golden* kind is just as much a cloth of gold in the dead of winter without flowers as this is in June with them, the tops of all the shoots being then like so much burnished gold. We believe the plant is not so gay during the summer; but we cannot yet say that we ever saw a morsel of it alive. Two correspondents were so good as to send it to us; but we completely failed in blowing the breath of life into them. *Sedum cæruleum* is the most likely thing we know of to match *acre*. The last experiment in the Experimental Garden furnishes the very thing our worthy correspondent wants. *Isolepis gracilis* will grow round all manner of vases in the open air, and hang down most gracefully, so that one might comb the grass right or left or all round. We grow it by the score, and it grows with us in the open-air vases better than it does with those in London in the Orchid houses. It is a green, grass-looking plant, but it is not a grass really. The drooping, grass-like growth is the same thickness from end to end, and the flower-heads come in small globes like the heads of pins, and no more. It is as cheap as common *Verbena*s, and one man sold 2,000 plants of it last year in London for "furnishing" alone.]

CULTURE OF MEYENIA ERECTA.—NECKLACE SEED.—PILEA MUSCOSA.

"What is the proper soil and culture for *Meyenia erecta*? also the name of the inclosed seed, and whether there is such a plant as *Pylea muscata*, as there is no mention of it in THE COTTAGE GARDENER'S DICTIONARY."—B. R.

[*Meyenia erecta* does most capitally in the compost they use for the best Fuchsias, one-half of which is loam, the rest turfy peat, rough leaf mould, and river or pit sand, and the very same culture as they give the show Fuchsias will suit it perfectly. The seed you inclosed is the "Necklace seed," *Abrus precatorius*, and is the production of a weed in tropical countries, and not worth growing in this. *Pilea muscosa* has been talked about in these columns ever so often under the name of the Artillery plant. Have you forgotten our battles with it when they were thundering at Sebastopol? It is a Lycopod-looking stove plant of the very simplest and easiest culture, and by wetting it while in flower-bud the anthers burst "pop, pop," and the pollen dust is the smoke.]

CULTURE OF STRELITZIA REGINÆ.

"What soil is best suited for the cultivation of a *Strelitzia reginæ*, and how often should the soil be changed? I have a plant in my greenhouse, where it has been at least ten or twelve years without blooming until last year, when it put up a weakly bloom, and it is now blooming again; and, as I am desirous of improving it, I thought I might do so by giving it some fresh soil after the present bloom is over. It is in a tub."—NORWOOD.

[Too much room at the roots and the want of a sufficient heat stimulus in the spring to set the plant into early growth were the cause of its being so long without flowering. The roots have now filled the tub, and the plant promises to bloom annually. You want to alter the conditions under this promise. You may succeed, and improve the plant certainly; but there are ten chances to one against you, if not twelve. This plant will most probably take another twelve years, under improved circumstances, to come to another flowering period. It is one of the least understood pot plants in England, though one of the oldest. If you could keep it at 50° from October to the end of February, and at from 60° to 70° in March, April, and May, it would bloom every year, and you might do anything with it; but as a greenhouse plant one pot or box in thirty years is enough for it, but be sure of the drainage.]

ROSES ON A SOUTH WALL.

"I have a wall about thirty yards long and five feet high with a direct south aspect, on which I planted, about four years ago, varieties of hybrid perpetual Roses. I find, however, I have committed a mistake, as the situation appears too hot for them. This year especially, notwithstanding frequent syringings, they are covered with aphides and 'honey dew.' Would you advise their removal, and if so, with what flowers or flowering shrubs would you replace them? The locality is the midland counties. I should, perhaps, mention that the Roses in the ordinary borders do very well, so that it evidently is but the soil or locality that disagrees with them."—AN AMATEUR.

[If perpetual Roses are on their own roots the extra heat from a three-feet wall behind them would be of no sort of detriment to them if the soil was good. We ourselves had scores of them for years in front of eight-feet and ten-feet, and, in one instance, in front of an eighteen-feet-high wall, but in no case did we train them to the walls. If your soil suits Roses the only fault with your border is that it is too dry at the bottom; it is, most certainly, not one-fourth of a degree too hot for a single perpetual Rose now in cultivation—that we are quite satisfied of. If we could get a wall fifteen feet high, with a border eighteen or twenty feet wide, we would undertake to bloom all the Roses in the country. Those who live on Rose soils have no idea of the enormous quantities of water that should be given to Roses on indifferent soils. Very old cowdung and burnt clay, half and half, is a good compost to improve bad Rose soil, but

fresh loamy turf is the best compost on good soils; the rest in liquid manure from the middle of May to the end of August. If we had our "way" we would pull up every dwarf Rose which is not on its own roots in all the land, put them into heaps, and burn them root and branch. Still, if one could make sure of the true Dog Rose for one's Roses, they would do pretty well; but all the best Dog Roses are used for standards, and all the "riff-raff" comes in to murder dwarf Roses on. Just take friendly advice, and keep Roses to that border, but have it trenched full three feet, and improved by loamy turf or burnt clay and rotten dung, according to its staple, and have all the Roses on their own roots, and put a two-inch-thick mulching over it for the summer, and you never saw such Roses as you will have in two years.]

FIG TREES IN POTS.

"I have lost this year the first crop of Figs in pots from their dropping off. The failure is generally ascribed to want of water. They have been watered every other day regularly. Is that an insufficient supply, and ought they to be watered every day, or twice in the day? What is the practice in good Fig culture?"—P.

[We should say you judge rightly as respects the Figs. If the pots were at all full of roots they would in sunny weather want water every day; perhaps, in extreme cases, twice a day. We can state no times—that would depend on the weather; but generally, if drainage is secured and the pots not too large, you can scarcely over-water Figs when swelling their fruit. Let them get thoroughly dry, and alas for the crop!]

PIT FOR MANY PURPOSES.

"I should feel obliged for your advice about my flower pit; its present dimensions are twenty-four feet in length and eight feet in breadth. I propose altering it thus: to remove the back wall, so that the pit will measure ten feet six inches inside measure; to make a path two feet four inches; and support the present framework upon posts, and have the space added covered with glass, so as to form a half-span roof. I am going to have the pit divided in two (a glass division); one half to be for propagating plants; the other for forcing French Beans, Strawberries, Melons, Cucumbers, or flowers, as may be required. After the propagating season I intend to grow Melons in pots. I propose heating it thus: a boiler and a four feet and a half brick tank divided in two, so as to form a two-feet flow and a two-feet return, covered with rough boards; then plunging materials for the pots. I shall have a simple contrivance to work one half of the pit at a time. I am to have a shelf suspended at the ridge above the path for French Beans, &c. The fire from the furnace I mean to pass along the pit at the top of the back wall, which will form another shelf of itself to place anything upon, such as flower seeds, French Beans, &c. Now, am I doing right? What sort of a boiler shall I require, and about what price? Would Thomson's retort boiler do, and which of his sizes should I require? How far should the glass be from the surface of the pit?"—JANET.

[We do not think we can do anything more for you than just to say that we have no doubt your proposed plan would answer well. Slates would be better than boards for the cover of your tank. If you use boards have open spaces daubed full of clinkers, &c. See articles on this subject lately. Thomson's small amateur's retort will suit you very well, or one of Rogers' smallest conical boilers. About £2 12s. is the price of the retort. French Beans, when growing, should be a foot from the glass, and Melons and Cucumbers fifteen inches. It is advisable to have a moveable stage for plants, and then, if too deep for Cucumbers, &c., use a trellis of any homely construction.]

TO CORRESPONDENTS.

CLERODENDRUM SQUAMATUM.—**GESNERA DONKELARII** (*An Old Subscriber*).—The mould on the under side of the *Clerodendrum* leaf is caused by the drying up of a profusion of watery glands, which come

out when the plant is growing in a damp hotbed in the spring. The cure is to sponge every leaf as soon as it is fully formed, and again when the plant is showing for bloom. It does little harm beyond the bad looks. The best way to train *Tecoma velutina* is the way which the owner of it likes best. It is immaterial to the well-doing of the plant which way it is trained. *Gesnera Donkelaarrii* grows from leaves and parts of leaves like the *Gloxinia*, and better if taken off before the plant throws up for bloom. We are not sure if it seeds, but it looks as if it would; at all events it is a most beautiful plant, that is to say, when the plant is done well, as Mr. Glendinning did it for the shows.

WILD BEES (*Morano*).—We believe it to be quite impossible to domesticate any of our wild bees: we speak in the plural, for there are many species. You will find full information relative to all of them in Kirby's *Monographia Apum Angliæ*. There is no queen among any of our wild species. You have no right to keep other people's pigeons because some of your own have left, any more than you would be justified in keeping another man's wife because your own had eloped.

BOILER (*W. O. D.*).—No doubt the one you mention would fully answer your purpose. It is *Veronica Andersonii*.

NAME OF ORCHID (*H. M. D.*).—An *Eria*, and if the flower was taken from an upright spike issuing from the bottom of the plant it is *Eria stellata*.

LINUM GRANDIFLORUM RUBRUM (*M. H., Elm Park*).—It seems to be the true, but was parched up, and so was the Scarlet Geranium. Such things can only travel safely in damp moss in a tin box. Your *Tropæolum* leaves were ravaged by the red spider. More moisture and flowers of sulphur are your remedy; but if the whole of the leaves are in such a state cut down the plants and burn them.

GALVANIC BATTERY (*A Schoolboy*).—This is quite out of our sphere.

BEE TRAPS (*An Apiarian of a Year*).—We have no means of explaining it more fully than it is explained in our "Bee-keeping for the Many." Say what special explanation you need.

PEAR LEAVES GRUB-EATEN (*W. Shore*).—The dark blotches on the leaves are caused by the grubs of a small smoth, *Argymoryges Clerkella*, or Pear-leaf Miner. We know of no cure. To prevent their recurrence collect the leaves in autumn and burn them, for on them are the eggs deposited.

NAMES OF GERANIUMS (*A. B.*).—*Diadematium rubescens*, alias *erubescens*, and *Pelargonium holosericeum*, the latter having the most silky velvet-like touch of leaf of all the Geranium race—a very scarce old kind. If all that are in cultivation of that race could be gathered into one garden or nursery, with a dozen or two that might be easily had from the Cape, and our present skill let loose among them, new gems surpassing our present jewels might shortly be expected.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

- JULY 20th. ROYAL AGRICULTURAL SOCIETY. SALISBURY. The Exhibition will be open to the public on the 22nd.
JULY 28th, 29th, and 30th. SHEFFIELD, SOUTH YORKSHIRE, AND NORTH DERBYSHIRE. Sec., William Henry Dawson, Fig Tree Lane, Sheffield.
AUGUST 8th, 10th, 11th, and 12th. CRYSTAL PALACE. Sec., W. Houghton. Entries close on the 11th of July.
AUGUST 19. BRIDLINGTON. Sec., Mr. Thomas Cape.
AUG. 29th. CALDER VALE. Sec., W. Irvine, Esq., Holmefield, Halifax.
SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.
SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Sec., Mr. H. Churchill, King's Head Hotel.
OCTOBER 1st and 2nd. WORCESTER. Sec., Mr. G. Griffiths, 7, St. Swithen Street, Worcester. Entries close Sept. 19th.
OCTOBER 7th. SOUTH WEST MIDDLESEX AGRICULTURAL SOCIETY. At Gunnersbury Farm, Ealing. Sec., J. Gotelee, Hounslow.
NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.
DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.
DECEMBER 30th and 31st. BURNLEY AND EAST LANCASHIRE. Entries close December 1st. Secs., Angus Sutherland and Ralph Landless.
JANUARY 4th, 1858. KIRKCALDY POULTRY AND FANCY BIRD SHOW. Sec., Mr. Bonthron, jun., Thistle Street.
JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.
JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.
N.B.—Secretaries will oblige us by sending early copies of their lists.

POLANDS WITH COMBS.

I MUST again ask for a little space in your columns for the purpose of speaking on the Polands. The predominant idea in "PERRUQUIER'S" and "C. E. C.'s" letters seems to be a wonder that Mr. Williams and I should have the presumption to dispute "a decision arrived at and acquiesced in by all, or nearly all, the best breeders and exhibitors in England." No doubt our audacity is unparalleled, but still we cannot help showing it.

I will grant you that all the prize-taking Polands, nay, three-quarters of the Polands in England are combless,

that these fetch great prices, and are much admired; but now you will hear everywhere that Polands are delicate, that they require the greatest care in rearing, that they are liable to malformations of many kinds, that they will only thrive on the most sheltered soils, and all this is true; and why? Because the weakest, smallest birds, so long as they are free from comb, are selected to breed from, and because their breeders have produced this delicacy by thwarting Nature. Those few persons who breed the combed Polands make no such complaints. No; they select their strongest, finest birds to breed from, and the more comb the better. So they possess fine, stately, strong birds, full of life and vigour, because Nature has fully endued them with the great principles of health and strength; and what unprejudiced person will not confess that the combs give Polands a far more noble *tout ensemble* than the absence of these crimson and handsome appendages? *Apropos* to this subject a correspondent, "G. W. B.," said that my reason for Polands having combs, namely, that they have them by nature, is no reason, because, if so, Cochins would have clear legs, and Dorkings only four claws. Now, I think his reasons are no reasons, because he quite forgets, in his indignant remonstrance to me, that Dorkings and Cochins, being indigenous primitive races, always had five claws in the one, and feathered legs in the other, whereas the absence of combs in Polands has been *entirely* produced by the arduous exertions of all the breeders who profess to admire that absence; therefore I think "G. W. B." might have been rather more merciful towards me.—THE COMB CHAMPION.

POLISH FOWLS WITHOUT COMBS.

"R. P. W." seems to imagine that he has quite settled his point, and I have no doubt he has to his own satisfaction, though, notwithstanding his remarkable logic, I take leave to assert that, so far as Polish fowls which take the best prizes at our English shows are concerned, his conclusion is entirely incorrect; in fact, the question is so far settled with English amateurs that I observe few of them have thought it worth while to combat the erroneous and peculiar views of your Irish correspondent. It is childish to argue that combs in Polish fowls are natural, and therefore the fowls should wear them. The fact is the majority of our exhibition birds are artificial, and have been brought to their present perfect state of marking or conformation by careful and long-continued selection and close breeding. Whether the originals of the Polish fowls had combs or not is entirely beside the question. It might just as well be argued that, because one of the original progenitors of the Sebright Bantam (a Polish hen) had a crest, therefore the Sebright should wear one. There is every bit as much logic in this argument as in that of the "COMB CHAMPION."

The simple question is, What are the chief points at which the breeders of Polish fowls aim? not what *were* the characteristics of their progenitors. Speaking for English Polish fanciers, I say the great points are size and shape of crest, and entire absence of comb in both sexes. In support of this assertion I confidently appeal to Messrs. Coleridge, Jones, and Adkins, three of our most noted Polish breeders.

"R. P. W." calls upon Polish fanciers to answer whether they do not breed a great number of chickens with combs. Undoubtedly they do, and Spanish fanciers breed a great number of chickens with red spots on their faces; and Dorking fanciers, notwithstanding the most careful selection of breeding stock, find that some chickens will come minus the fifth toe; but this argument is really so ridiculous that I hardly like to treat it seriously. In fact, "R. P. W.," after enjoying his triumph over the "no combs," because he imagines this fact proves his theory, actually himself demolishes it by stating that he has for many years killed all such cock chickens as showed combs. Now, if this means anything it means that "R. P. W." has bred chickens without combs, and consequently I am at liberty, according to his method of logic, to conclude that Polish fowls should *not* have combs. I must also state that, so far as my experience goes, combless Polish chickens are not invariably weak things that would die on a dunghill if not

killed. It is difficult to understand how "R. P. W." has proved this if he has "invariably" killed such chickens; but, as he makes the assertion so boldly, I am bound to believe that, by some peculiar method, he has ascertained this to be true with regard to Irish chickens; but it certainly is not true with regard to English ones, for the largest, strongest, and handsomest bird by far out of two broods which I reared last season was a cock entirely without comb. As I do not invariably kill all chickens with combs I can speak positively on this head; indeed, "R. P. W.'s" statement thereon is so monstrously absurd that I am sure all our amateurs of Polish will say—"MOONSHINE."

[The controversy had better now close, for it will not induce either party to change his opinion, and it is settled by our principal English breeders and judges of poultry that Polish fowls should not have combs. It is useless to contend against this decision on a mere matter of taste, for we have seen Polish fowls without combs quite as large and as vigorous as those having combs.—ED. C. G.]

GAME FOWLS.

As an amateur or fancier of full thirty years, and intimately acquainted with most of the well-known old fanciers living in my time, perhaps you will allow me, without any vanity or presumption, to make a few remarks. I quite believe with your old correspondent, "THE NORTH COUNTRY AMATEUR," in several original varieties of Game fowl. The *principle* of breeding has been a natural hobby of mine, and with opportunities of breeding and information has made me rather opinioned in my own views.

Naturalists have continued an error in supposing all fowls to come from one common stock. The same of the dog and pigeon. The fact is they have been naturalists, and not amateurs or fanciers; theoretical, but not practical; philosophical, but not physiological. The Almighty could have as easily created 500 distinct varieties as five; and wherever there is evidence of an instinctive property it must be an original creation, and not capable of being produced by change of climate or circumstances. The instinctive character of the fowl under notice is *game* or *courage*, and you might as well expect (excuse my illustration), by constantly mixing tumblers of weak spirits and water together, to produce a tumbler of rectified spirits, as by constantly breeding with the Jungle fowl only to produce the Game fowl. A gentleman, a well-known fancier in "my time," greatly preferred the white-legged Black-breasted Reds to all others. The hens he termed "wheatens;" I prefer the word to cinnamon. I bred them myself, and no birds could be gamer, or more sound in feather, or more beautiful. Another gentleman amateur living at Hexton had nothing but blackish birds, with dark eyes, black legs, and grey hackle; hens the same, mostly spurred; carried six to four wherever they went. Now, feather is no more the sole characteristic of Game fowl than colour is of a race-horse; but it is that animation that stamps his carriage and actions, and arises from that indomitable courage which no other fowl possesses, and without which he is not a *Game fowl*; and no amateur or fancier can well call himself a judge, or fully appreciate that bird, without having witnessed his unflinching endurance of punishment from his antagonist either to death or victory.—H., *Highgate*.

WHITE DORKINGS.—POULTRY AT THE ROYAL AGRICULTURAL SOCIETY'S SHOW.

I HAVE for the last two years turned my attention to the breeding of White Dorkings, and now, having got up a stock of what I consider to be very fine high-bred fowls, I am naturally anxious to exhibit them. Why should some of the great Poultry Shows, the Crystal Palace for instance, give only two prizes for the White, when they offer five, and those of much larger amount, for the coloured Dorkings? and the Exhibition at Gloucester ignores them altogether. Would a White Dorking cock have any chance of a prize if

he is sent to compete with coloured Dorkings, which would, of course, be of much greater size and weight? or would a pen of White fowls or chickens of the highest and purest breed of Dorkings stand the slightest chance against a pen of gigantic Sussex?

I will take this opportunity of asking, also, why the Secretaries who advertise Poultry Shows in *THE COTTAGE GARDENER* do not *always* mention on what day the entries close. I should have sent some fowls to Salisbury if I had known that the entries closed on June 1st; but, as I did not know that the Royal Agricultural Society required such a very long notice, I was too late in writing for the prize-list, &c.—A SUBSCRIBER.

[White Dorkings are far more valuable as table fowls than Spanish, Polands, and Hamburgs, and ought to be more encouraged.]

The Royal Agricultural Society evidently are not at all anxious to have many poultry pens at their Shows. They had better take more judicious measures relative to this kind of live stock, or else abandon giving prizes for poultry altogether.—ED. C. G.]

LEAMINGTON POULTRY EXHIBITION.

THIS was held on the 8th, 9th, and 10th inst. There were 338 entries. Judge, Mr. Geo. Lowe, of Wathely, near Tamworth.

COLLECTIONS OF THREE KINDS.—Silver Cup, Mr. J. Busst, jun., Walsall, Staffordshire. Highly Commended, Mr. J. K. Bartrum, Richmond Hill, Bath.

SPANISH.—First, Mr. W. Dawson, Hopton Mirfield. Second, Mr. E. Page, Smethwick. Third, Mr. A. J. Ivens, Lutterworth. Commended, Mr. J. Whittington.

DORKING (Coloured).—First, Mrs. Hanbury, Leamington. Second, Mr. J. Chin, Birmingham. Third, Mr. J. Smith, Henley-in-Arden. Commended, Mr. J. Frost, Parkham, Woodbridge; Mr. Thursby, Wormleighton.

DORKING (White).—Prize, Mr. J. Jennens, Birmingham.

GAME (White and Piles).—First, Mr. T. H. D. Bayley, Biggleswade. Second, Mr. F. Sabin, Birmingham. Third, Mr. J. M. Baker, Atherstone. Highly Commended, Messrs. Bullock and Rapson, Leamington. Commended, Mr. T. W. Jones, Wellington.

GAME (Black-breasted and other Reds).—First, Messrs. Bullock and Rapson. Second, Mr. E. Glover, Solihull. Third, Mr. T. Cattell, Milverton. Commended, Mr. J. Killing, Burton-on-Trent; Mr. W. Ballard, Leamington; Mr. T. W. Jones, Wellington; and Messrs. Bullock and Rapson, Leamington.

GAME (Duckwings and other Greys and Blues).—First, Mr. S. Matthews, Stowmarket. Second, Mr. W. Dawson, Selly Oak. Third, Mr. T. Grove, Leamington. Highly Commended, Mr. G. C. Peters, Birmingham.

GAME (Black and Brassy-winged except Greys).—First, Mr. W. Dawson, Selly Oak. Second, Mr. W. Ballard, Leamington. Third, Mr. J. Jennens, Handsworth. Highly Commended, Mr. H. Parry, Wellington.

COCHIN-CHINA (of any colour).—First, Mr. H. James, Walsall. Second, Mr. G. C. Peters, Birmingham. Third, Rev. G. F. Hodson, Bridgewater. Commended, Mr. J. R. Rodbard, Langford.

COCHIN-CHINA (White and Black).—First, Mr. W. Dawson, Hopton Mirfield. Second, Mr. J. K. Fowler, Aylesbury.

HAMBURGH (Gold-pencilled).—First, Rev. T. L. Fellowes, Acle, Norfolk. Second, Mr. G. S. Fox, Wellington. Commended, Mr. J. Wittington, Henley-in-Arden.

HAMBURGH (Silver-pencilled).—First, Rev. T. L. Fellowes, Acle, Norfolk. Second, Miss S. Perkins, Sutton Coldfield. Commended, Mr. E. Archer, Malvern; Mr. E. Taverner, Hartshill.

HAMBURGH (Gold-spangled).—First, Mr. I. Davies, Harborne. Second, Miss E. S. Perkins, Sutton Coldfield. Commended, Mr. G. S. Fox, Wellington.

HAMBURGH (Silver-spangled).—First, Mr. T. Reading, Fulford Hall. Second, Mr. R. W. Fryer, Hereford.

POLANDS (any variety).—First, Mr. W. Dawson, Selly Oak. Second, Mr. T. P. Edwards, Lyndhurst. Third, Miss S. Perkins, Sutton Coldfield. Highly Commended, Mr. T. P. Edwards, Lyndhurst.

ANY OTHER DISTINCT BREEDS.—First, Rev. T. L. Fellowes, Acle, Norfolk. Second, Mr. G. Dawes, Beaudesert. Third, Mrs. A. G. Brooke, Woodbridge.

CHICKENS.—First, Miss S. Perkins, Sutton Coldfield. Second, Mr. T. P. Edwards, Lyndhurst (Polands). Third, Mr. J. Frost, Parkham (Coloured Dorkings). Highly Commended, Mr. J. H. Fowler, Aylesbury. Commended, the Right Hon. Lady Guernsey, Offchurch (Cuckoo Dorkings).

CLASSES FOR SINGLE COCKS.—Best three Pens, Silver Cup, Miss

M. Marriott, Floore, near Weedon. Highly Commended, Mr. J. K. Bartrum, Richmond Hill, Bath.

DORKING.—Prize, Mr. E. Seaman, Harbury.

SPANISH.—Prize, Mr. D. Young, Leamington.

COCHIN-CHINA.—Prize, Mr. J. K. Fowler, Aylesbury.

PENCILLED HAMBURGH.—Prize, Mr. J. Marshall, Taunton, Somerset.

SPANGLED HAMBURGH.—Prize, Mr. J. Edwards, Leamington.

GAME (White and Piles).—Prize, Mr. W. Ballard, Leamington.

GAME (Black-breasted and other Reds).—Prize, Mr. T. W. Jones, Wellington, Salop.

GAME (Duckwings and other Greys and Blues).—Prize, Mr. E. Taverner, Hartshill, near Atherstone.

GAME (Black and Brassy-winged except Greys).—Prize, Mr. R. W. Fryer, Hereford.

POLANDS.—Prize, Lady Guernsey, Offchurch, Bury, Leamington.

BANTAMS (Gold-laced).—First, Miss E. S. Perkins, Sutton Coldfield. Second, Mr. W. Spary, Markgate Street, Herts. Commended, Rev. G. F. Hodson, North Petherton, Bridgewater.

BANTAMS (Silver-laced).—First, Mr. W. Spary, Markgate Street, Herts. Second, Rev. G. F. Hodson, North Petherton, Bridgewater.

BANTAMS (White).—First, Mr. R. W. Fryer, Hereford. Second, Mr. J. K. Bartrum, Richmond Hill, Bath.

BANTAMS (Black).—First, Mr. R. W. Fryer, Hereford. Second, Miss M. Horton, Birmingham. Commended, the Hon. Miss Dillon, No. 34, Hill Street, Berkeley Square.

DUCKS (White Aylesbury).—First and Second, J. Weston, Aylesbury, Bucks.

DUCKS (Rouen).—First, Mr. J. Weston, Aylesbury, Bucks. Second, Mrs. R. G. Lloyd, Bristol.

DUCKS (any other variety).—First, Mr. A. J. Ivens, Lutterworth. Second, Mr. J. Choyce, jun., Harris Bridge, Atherstone.

GEESE.—First and Second, Miss Rose, Offchurch (White Geese).

TURKEYS.—First, Mr. J. Worthington, Leamington. Second, Mr. J. N. Beasley, Northampton.

PIGEONS.—*Carriers.*—Prize, Rev. G. F. Hodson, North Petherton, Bridgewater. *Barbs.*—Prize, Mr. G. C. Adkins, Birmingham. *Pouters.*—Prize, Mr. H. Child, Birmingham. *Runts.*—Prize, Mr. E. A. Lingard, Birmingham. *Fantails.*—Prize, Mr. J. Choyce, jun., Harris Bridge, Atherstone. *Jacobins.*—Prize, Mr. G. C. Adkins, Birmingham. *Turbits.*—Prize, Mr. S. H. Hyde, Ashton-under-Lyne. *Nuns.*—Prize, Mr. H. Child, Birmingham. *Archangels.*—Prize, Mr. G. C. Adkins, Birmingham. *Trumpeters.*—Prize, Mr. H. Child, Birmingham. *Almond Tumblers.*—Prize, Mr. G. C. Adkins, Birmingham. *Owls.*—Prize, Mr. G. C. Adkins, Birmingham. *Dragons.*—Prize, Mr. W. Appleby, jun., Burton-on-Trent.

OUR LETTER BOX.

HENS NOT BROODY (G. R.).—Broodiness does not depend upon the feeding. Your hens are probably Polands or Hamburgs, kinds which seldom sit.

LONDON MARKETS.—JULY 20TH.

COVENT GARDEN.

The supply is now heavy of all descriptions of goods, and business not quite so brisk to clear it off—prices, consequently, receding. Foreign consignments inwards comprise *Melons*, *Apricots*, *Pine Apples*, and *Cherries*; and in Vegetables we are still receiving *French Beans*, *Artichokes*, and *Endive*, with some very good *Tomatoes*.

POULTRY.

The hot weather and the decline of the London season have had a great effect on the market during the past week. There is a sensible diminution in the prices.

Large fowls.. 6s. 6d. to 7s. 0d. each.	Guinea Fowls 0s. 0d. to 0s. 0d. each.
Smaller do. 4s. 0d. to 5s. 0d. „	Pigeons 9d. to 10d. „
Chickens .. 2s. 6d. to 3s. 6d. „	Rabbits.... 1s. 5d. to 1s. 6d. „
Goslings 6s. to 6s. 6d. „	Wild ditto 7d. to 9d. „
Ducklings.. 3s. 3d. to 3s. 9d. „	Leverets.... 3s. 0d. to 4s. 6d. „

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—July 21, 1857.

WEEKLY CALENDAR.

D M	D W	JULY 28—AUG. 3, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
28	TU	Chervil (<i>Chærophylum</i>).	30.064—29.980	79—50	S.W.	08	20 a. 4	53 a. 7	10 15		6 12	209
29	W	Fennel (<i>Anethum</i>).	30.194—30.146	82—51	S.W.	—	21	51	10 29	8	6 10	210
30	TH	Sea Lavender (<i>Statice</i>).	30.244—30.213	87—50	W.	—	22	50	10 50	9	6 8	211
31	F	Flax (<i>Linum</i>).	30.227—30.161	90—52	S.	—	24	48	11 18	10	6 5	212
1	S	Coral-rooted Twayblade.	30.149—30.093	88—56	E.	—	25	46	11 a. 59	11	6 2	213
2	SUN	8 SUNDAY AFTER TRINITY.	30.052—30.029	92—52	E.	—	27	45	morn.	12	5 58	214
3	M	Saffron (<i>Crocus Autumn</i>).	30.066—30.022	89—55	S.E.	—	28	44	0 55	13	5 54	215

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 74.7°, and 51.8°, respectively. The greatest heat, 92°, occurred on the 1st, in 1846; and the lowest cold, 38°, on the 28th, in 1854. During the period 91 days were fine, and on 105 rain fell.

NOTES ON NEW OR RARE PLANTS.

ARISTOLOCHIA THWAITESII. Nat. ord., *Aristolochiaceæ*.—This curious plant is a native of Ceylon, and was first introduced into this country by Mr. Thwaites, whose name it bears. Main stem rhizome-like, from which arise numerous simple stems about two feet high, covered with grey-coloured, thickly-set, short hairs, and foliaged from base to apex. Leaves between lanceolate and spatulate; margins entire; veins very prominent; under side very downy, and of a grey colour; upper surface dark green, and less downy than the under; about seven inches long. Flowering stems about six inches high; leafless, but producing a small bract opposite each flower; grey and downy. Flower a long twice-bent tube, contracted in the middle, yellow outside, and inside very dark purple. The pedicels are so long and slender that the flowers rest on the surface of the pot, and in this position each individual flower bears considerable resemblance to the neck of a swan.

This plant presents at once two very desirable qualities; for, besides being sufficiently beautiful to please the taste of such as delight in harmony of colour, it also possesses the worth to secure the attention of those who desire curious form. It flowers very freely, and is easy of cultivation. Copious drainage is the most essential point to be kept in view in its culture, because the plant is extremely impatient of stagnant moisture at the roots. It thrives very well in a compost of nice fibrous peat and loam—of the latter two parts, and of the former one part, with sand enough to make the whole porous. By judicious stopping the plant branches freely, and ordinary stove treatment is best suited to develop it well. It is quite an acquisition to our stoves, and should have a place in every collection in which beautiful as well as curious interest is desired.

BEGONIA LACINIATA. Nat. ord., *Begoniaceæ*.—Native of the East Indies, and first introduced into this country by Dr. Royle in 1855. It flowered first in Britain at Kew Gardens last winter. Stem creeping, covered thickly with deflexed, short, white hairs. Leaves obliquely cordate, zoned on the upper side with dark and light green, and the under side deeply marked with bright crimson; margins deeply and regularly laciniate. Flowers in rich, dense panicles on long, stout pedicels; pure white, but tinged with crimson hairs on the outside of both calyx and corolla. General habit low, close, and creeping.

Begonias are quickly becoming a justly-esteemed genus of plants. They afford such beautiful flowers, and such a variety of charmingly-tinted foliage of pleasing and varied form, that they must have a place in the interests of horticultural people. This species is a very valuable addition to the list of the beautiful genus to which it belongs, and when it becomes better known it will be esteemed as well for its fine foliage as for its beautiful flowers, and the flowering as it does in winter renders this species still more valuable. A shallow pot is the best in which to cultivate this plant.

The drainage must be plentiful and well secured; for, if stagnant moisture is allowed to lodge among the roots, the leaves shrivel up and turn brown in the margins, and the flowers drop off. The compost it thrives best in is a light, very fibrous loam one part, and two parts rough leaf mould, with a small portion of sand, and all roughly broken up together. Plenty of moisture should be given both at the root and overhead; but it must not be stagnant, else the plant will suffer.

AMPHICOME EMODI. Nat. ord., *Bignoniaceæ*.—Native of North India. An herbaceous plant, almost, if not quite hardy. Stem about a foot and a half high, glabrous, branched. Leaves long, pinnate, with from five to seven pairs of opposite, cordato-ovate leaflets on very short petioles, smooth; margins lobed and crenate. Peduncles terminal, leafless, or only with two or three wedge-shaped bracts. Flowers large, very handsome, at first corymbose, but gradually, as the age of the flower increases, it becomes racemose. Corolla between funnel-shaped and campanulate; orange colour, shading off into pink towards the margin.

This is really a fine and useful plant, being a gem in itself, and flowering at a season when there is little, without the expense and trouble of forcing, to grace the greenhouse and keep it gay. It has a high claim on the attention of amateurs and gardeners. It is very easy of cultivation, a good free loam, plenty of drainage, and careful attention to the watering, with the protection of a cool frame in winter, being all that is necessary in pot culture; and it is quite probable that it would stand unharmed, with slight protection, our southern winters out of doors.—S. G. W.

GERANIUMS.

THREE collections of English seedling greenhouse Geraniums of this season have been shown to me by three different raisers, a private gentleman and two private gardeners, one of whom is very well known as a duke's gardener for many years. None of these came through our office, but were sent here direct with letters which were neither marked "public" nor "private." If I were to publish these letters, or any one of them, I might give offence to the writer; and, on the contrary, having not even referred to them yet, the parties may have felt disappointment. The best thing which I can do, therefore, is to explain the Act of Press Parliament which bears on the question, and after this to act up to the letter of the law. The law is this:—All letters whatsoever, upon any subject, which are sent to an Editor, or to any one on his staff, if that one is known publicly to be "connected with the press," may be printed and published to the world in full or in halves, provided always that such letters are not marked "private" at the top of the first page. Suppose an officer of the Guards writes to me to ask if this is a good time to sow herbaceous Calceolarias, to be planted out next May, for filling up the open spaces between the Verbenas, the Petunias, Calceolarias,

and what not, and reminds me that I have said that this was the legitimate and most proper use to which that strain can now be applied, adding that we were acquainted in early life, each of us having stood at the head of his corps in the day of trial. Suppose, also, that the rest of his letter was about something else "between ourselves;" and then suppose his letter not to have been marked "private," I could lawfully print every word of it, even if it related to his plans for running off with a heiress, though of course I would not do so to an old mess-mate. I would only answer the first part of his letter, and say, Yes, get a good packet, and sow the seeds in pots very thinly over light, sandy compost, but water the pots before you sow, and put them in a dark place for a week or ten days. A mat over a handlight or a Cucumber light will make a dark place, and so will an old tea-chest turned upside down; and herbaceous Calceolarias will vegetate at this season under anything which will keep the sun and daylight from them. If the darkness is damp at the same time, like a foggy night, the pots will not want water till the seedlings are up; and I would add, while you are at it you ought to have a packet of Cineraria seeds, and one of China Primrose, to go on the same treatment; also a good selection of annuals. I take it for granted that he said in his letter he never had the beds so long uncovered as they were this summer, and therefore concluded that he was working beyond his capital, and took no thought of the consequences, as many honest people do when they have twice as much room for beds as they have glass to keep plants for filling them properly at once; and those who do so ought to make both ends meet with a *few choice* annuals from autumn sowing in the open air; but every one ought to choose such annuals as he or she thinks most of. There is nothing new that way which is worth recommending; besides, it seems out of place altogether to be at the mercy of fashion here as with one's dresses. In large gardens they have so much ground that they never seem to want changes, but with most of us it is very different. Without as many shifts and changes as we can contrive we can never make our gardens interesting to our friends and visitors, however well we may like them ourselves. I know many places which I would not give a pinch of snuff to see, indeed, should think it time lost to look over them, and yet hundreds and hundreds are spent on them; but their owners have no brains for contrivance, and what you saw with them ten years ago you would be sure to find again to-morrow if you called. Nobody, however, likes to call at such places, although some must do so for the look of the thing, which thing is just like looking through an auger hole—a perfect bore.

"The beauty of this place is, that, come when we may, it is sure to have a different arrangement from the last and all the rest." It was under this impression that so many wanted to see the Experimental Garden, although there is hardly one out of a thousand who could distinguish between an experiment and a plain thing. Every one who wished to come expected to see something "out of the common routine:" that was the first experiment we proved—the universal run after something fresh; and, with that experiment proved so satisfactorily, you may believe me we shall never stand still or on trifles as long as we are experimentalists.

The latter part of the officer's letter was droll enough, but very gentlemanly. It would amuse most young people; but, although he did not put "private" on it, I should "catch it" the first time we met if I put it in print; but when you come from both ends of the question up to the middle you will find it, as Mr. Hogg tells us of the tails of the animal and vegetable kingdom, that it is difficult to know which is which, and very often I am at this tail part of the story, and know not how to turn round for the best point; but I

am never at a loss when I see a good batch of seedlings or a batch of good seedlings. Two of the collections referred to were between the spotted French Geraniums and the English Pelargoniums, and one was the result of experiments in a new strain. The three put together furnished this conclusion—that any one with ordinary industry and a dozen well-selected kinds of Geraniums may increase them into scores of kinds quite as good as any which could be bought, by merely crossing them one year and flowering them the year after.

Formerly I used to tell the best parents for crossing from, but now I do not know many of the best and newest kinds myself, and I am so particular that I shall not even mention any of the parents of those new seedlings which I admired most, lest I should injure or offend those who sent them to me privately as I suppose. After all the attention I have bestowed on this subject I have come to this conclusion most decidedly—that it is just like love's labour lost to waste time and room in crossing summer Geraniums unless the raiser is at the top of the tree, and can get a good sum for his best seedlings. All the effort should be to put down summer Geraniums to the same extent as summer Roses, and to bring in hybrid perpetuals to bloom all the year round from May to October naturally, and through the winter by forcing nature. That it is possible to get hybrid perpetual Pelargoniums for the conservatories as good as we have now at the shows, and a great deal better, I am as fully convinced of as of any stroke in gardening.

One of the collections of plants, or rather flowers, was packed differently from any way I ever heard of, and it answered so well that I am sure it will be useful to know it, as no flowers in the world are more difficult to carry or to send to a distance than Geranium flowers; but, by a slight alteration on this mode, I think full-blown cut blooms of Geraniums might be sent up, per night mail, from Liverpool to London, all the bloom season, and the comfort and pleasure of seeing one's flowers come fresh to London is a luxury which few have yet attained to. The flowers, which reached me quite fresh from a considerable distance, had long stalks, and nearly the whole length of the stalks was plunged into water, held in tin tubes about an inch in diameter, and to keep the water from "spilling" moss was worked in *among the stalks*, and the mouth of the tube stuffed with moss; the tubes were then packed in moss at the bottom of a basket, just as nurserymen pack pots for carriage. All that seemed wanting in this arrangement was to have the sides or top of the basket open in the way baskets are for carrying and exhibiting fowls in, for the slightest confinement will affect Geranium flowers in a very short time, and those of the scarlet races more so than the Pelargonium kinds. I can take an open nosegay of all kinds of Geraniums from here to London safe enough; but if I put them in a close box all of them that are open will fall to pieces as soon as, or soon after, the box is opened.

This year I shall more earnestly than ever recommend that all kinds of Geraniums for private use can hardly be too old. From our own recent experiments we have proved this over again. My *Lady Caroline*, now twelve years old, is planted out this year in a box on the window-sill, and Lord St. Leonard's cannot help admiring it morning, night, or noon, when on his way to and from the House of Lords; and earlier in the season I bought three lots of them at a sale, all the plants being from eight to twelve years old, and they have been indeed most beautifully in bloom. If the Queen could now see a bed of twelve *Lateripes roseum*, with stems as thick as walking-sticks, she would order none of the Ivy-leaves to be planted in the royal gardens till the plants were over seven years old. Three plants of *Sidonia* (the best of all for pollen to get hybrid per-

petuals), which are eleven years old, began to set for seed pretty freely, but they are not old enough yet to ripen much seed. Perhaps at twenty or five-and-twenty all kinds would seed, and if so, what a world of flowers they would soon make! D. BEATON.

SHORT CULTURAL NOTES FOR WINDOW GARDENERS.

THESE will bear reference to plants chiefly that have already been mentioned.

ACACIA, such as *grandis*, *armata*, &c.—The last named is much used in London as a window plant. They will thrive well in winter where the temperature is seldom below 38° and not often above 50° to 55°. They delight in fibry loam and a little peat. When done flowering they may be set on the balcony, or anywhere out of doors in summer where they will have plenty of water at the roots, and be frequently syringed overhead to keep the red spider and scale at a distance. If much exposed to the sun the pot should be shaded from it.

ACHIMENES.—I introduce this tribe here because I have seen the old *coccinea* and the beautiful *longiflora major*, blue, and *patens*, crimson, doing well in a window in July and August. The scaly roots were kept in dry sand in saucers in a cupboard not far from a kitchen fire all the winter. The least damp and a temperature approaching the freezing point for any length of time will be sure to kill them. These began to vegetate about the middle of April. Eight or ten roots were placed in six-inch pots in rich sandy loam, and about two inches from the rim of the pots, the tubers being covered about half an inch. Before the shoots got to the top of the pot a pane of glass was placed across the pot: after that it was not needed. Plenty of moisture was given them; but, instead of air being admitted at the bottom of the sash, a little was given at the top, and in bright sunshine the plants were protected by a muslin blind. When the flowering was over and the growth began to decay the pots were set out of doors in a warm, sunny spot, and little or no water given. When wholly decayed the roots were taken out and placed in the sand for the winter.

AGERATUM.—For windows cuttings may be struck under a handlight or bellglass in summer or autumn, and kept at from 35° to 45° in winter, and the size of your plant after the new year will soon depend on the pot room and head room you can give it.

ALOE.—Such kinds as *incurva*, *tenuifolia*, *aristata*, &c., are suitable for a window, especially where other succulents are grown. Sandy loam with a little lime rubbish suits them well. The chief care is to give little or no water in winter, and a temperature ranging from 35° to 45° and upwards.

ALOYSIA CITRIODORA, or *Lemon-scented Verbena*.—Whoever enjoys a "smile of thank you very much" from a fair lady should be able to present a twig or a plant of this Sweet Verbena as it used to be called. Some of its admirers grieve when its leaves fade in the autumn, and dismiss it as gone and dead, when it is just as natural for it to lose its leaves as for an Ash or Elder to lose theirs every season. Few prized things are more easily kept. When the leaves have fallen it will stand anywhere, in garret, cellar, or stable, where frost cannot get much at it, and where the roots will be dry rather than wet. When it begins to bud about March and April it must be brought to the light of the window; then old pieces of the shoots strike nearly as well as Gooseberry cuttings, and will do so also if placed in a box in autumn, and covered up from the cold. Young shoots, when grown from the stems about two inches, strike freely in sand under a bellglass. Any common soil with good drainage will suit it.

ANEMONE.—Seeds may be sown at any time. To have nice double ones early in spring plant the roots, or corms, in pots early in winter, and keep them in a cool, dark place until they appear, when they should be brought to the light and watered as they require it. A cool window suits them best. When done flowering water only as long as the foliage is green; then refrain, and dry and remove the roots, keeping them dry until next winter.

ANOMATHECA CRUENTA.—This beautiful flowering bulb is

just fitted for a window. Seeds sown one spring will bloom the following one and early summer. When fair-sized bulbs are procured they multiply so fast that they will chiefly be depended on. From six to a dozen of these bulbs should be placed in a six-inch pot in sandy loam, and covered about one inch or so. When the stems appear give light and water. The flower-stems average from a foot to nine inches in height. When done flowering curtail water, and as the foliage dies refrain altogether, and either allow the bulbs to remain in the pots in any out-of-the-way place secure from frost, or take them out and keep them in dry sand, replanting when they show signs of moving.

ANTIRRHINUM.—These are easily raised from seeds. Some of the best sorts, as *Hendersonii*, frequently grace a window. These are raised from cuttings, generally under a handlight, in sandy soil in June and July, potted off, and kept in small pots during the winter in a spare room where there is little or no fire, for much of that would draw and injure them. Early in spring the plants to be stopped, and shortly afterwards potted in larger pots in rich, mellow, sandy loam.

AURICULAS.—I just mention these because, if the plants can be kept airy, cool, and dryish in winter, they will bloom nicely in spring in a window where air can be given, where there is no great amount of fire, and where a window curtain or blind will keep off the too great force of the sun's rays. A rich top dressing of loamy soil and weak manure waterings when growing and flowering will much improve them. Where a room is not regularly used by the family few things would beat these, with Polyanthus and the double Primroses, in a window in spring.

AZALEA INDICA ALBA will do pretty well to flower in May and June. When done flowering keep it close, and a little shaded with a curtain for a month; then move it outside, and if to a balcony or flower garden give it plenty of water, and shade the pot, but not the plant except for a few days at first, from the sun. The compost should be chiefly heath soil.

BULBS, such as *Tulips*, *Jonquils*, *Narcissuses*, and *Hyacinths*.—Pot them as soon as you can receive them in autumn; use light, sandy, rich soil; and place them so that most of the bulb is covered. Four-inch pots will generally be best, and of the smaller Jonquils and Tulips three bulbs may go in one of that size, and one Hyacinth and Narcissus. Set them in any shady place when potted, and if covered over with ashes several inches so much the better; a dark cupboard, where the soil will not be likely to get dry, will do very well. Before the stalks and leaves show themselves the pots will do best in the dark, and to do well the pots must be full of roots before the leaves or flower-stems show much; then expose them to light during the day, and for early ones move them to the chimney at night. A paper funnel, open at the point, placed over the pot will cause the stems of Hyacinths to rise more freely. A little weak manure water will be serviceable when growing. Those in glasses treat in the same manner. To avoid trouble I grew them likewise in pots until they got nearly to the flowering state; then turned the ball out, and moved all the earth from it by squeezing it gently between the hands in a pail of water, and then placed the roots in the glass. The oftener the water is changed the better, say once a day; but it must be soft, and of the same temperature as the room. These bulbs are generally procured every year, and must be so if, when done flowering, the pots are placed in any out-of-the-way corner. To succeed with them year after year the leaves must be as carefully nourished as the flowers, watering them, and giving them a good growing position so long as they remain green, refraining from watering as the leaves decay, drying and ripening the bulbs, and afterwards putting them in drawers or cupboards until the autumn.

BALM OF GILEAD (*Dracocephalum Canariense*).—This is a great favourite with many cottagers. It flourishes well in sandy loam. Cuttings strike freely when protected with a pane of glass over the pot. When done flowering it should be cleaned and pruned in to keep it somewhat bushy.

BALSAMS.—These are deservedly great favourites. For the window the best time to sow is from the middle to the end of April. Choose a six-inch pot, and with drainage and soil let it be half filled with light sandy loam and leaf mould; then sow and slightly cover the seeds, placing a square of

glass over the pot, and setting it near the fireplace for warmth. As soon as the seed leaves appear the pot must be placed in the window during the day, and moved to a warmer situation at night. As they go on edge up the glass a little for air, and the space between it and the soil will enable you to give several slight sprinkling earthings-up to the plant, which will strengthen them, and cause the protrusion of surface roots before you require to pot them separately, using for this purpose three or four-inch pots. In these they had better remain in the window until you see whether the bloom will please you; then throw faulty ones away, and give more pot room to the others, using rich light loam. With plenty of water a six-inch pot will grow a nice Balsam. If you want a particularly nice plant give it ultimately an eight-inch pot, and until it has filled it with roots nip off all the blooms as they appear. Too much air can hardly be given after the middle of June, and when the pots are getting full of roots they should have no shade, as that will make them lanky instead of compact and bushy.

BEGONIA EVANSIANA, called also *discolor*.—Though the foliage is rather rough, it is yet admired by many for its panicles of bright pink flowers. As soon as the leaves and stems show signs of decay in autumn refrain from watering, and place the pot in a dry, sunny spot to ripen the corm tubers; in winter just secure it from frost anywhere. I have known it kept many years in a cow-house, with a little litter over it and Dahlias, &c. When the shoots get an inch or so in length in spring and summer shake the earth from the roots, and select three of the strongest for a six-inch pot, or four for one of seven inches or so, placing the strongest for a centre and others for a circumference. Use sandy loam and leaf mould, and plenty of water when the plant is growing and flowering, and many a one will next to covet the panicles of pink blossom.

CALCEOLARIA (HERBACEOUS).—Sow seeds in August, covering with sand and a pane of glass; prick out the seedlings as soon as handleable; keep them moist and cool, but free from frost in winter; pot off singly in spring; freedom from frost, coolness, air, and plenty of cool water are the elements of success.

Shrubby ones.—Take off stubby cuttings in September, insert under a bellglass or handlight in a cool, shady place, pot when struck, keep cool and airy in winter, and repot early in spring. Use light, rich, sandy loam, such as sandy loam and very rotten dung or leaf mould would supply you with. Closeness, warmth, and dryness are their bane.

CALLA ÆTHIOPICA, or RICHARDIA ÆTHIOPICA, the *White Arum-like plant*.—Propagated by suckers and divisions in spring. Use stiffish loam and a little leaf mould; give plenty of water as it is growing and flowering; curtail water in autumn, and give but little or none in winter; the soil should be moistish; keep where frost will not reach it. When it begins to grow afresh in spring top dress or repot, place it in a saucer in the window, and give water as it requires it.

CAMELLIA.—The *Double White* answers about the best for the window. When done flowering keep it in a close, warm corner of the window, somewhat shaded until it has made its wood; then place it where it will have the morning and evening sun, but be protected from the mid-day sun out of doors, and house in the middle of October, giving as much air as possible in winter, just merely excluding frost.

CAMPANULA PYRAMIDALIS, blue and white.—There are many modes of raising these; the following may be the best for the windows:—Get young plants in summer, or procure cuttings in April from the base of large plants; strike these under a square of glass; pot off in small pots; repot until you get them into four or six-inch pots before winter, preferring the smaller if the pots will not be well filled with roots; keep cool and just moist in winter, with plenty of air when at all mild; shift again by March, and when the roots work well in the new soil give plenty of water, especially after you see the stem rising. When done flowering you will find plenty of cuttings or suckers for making fresh plants. Sandy loam and a little leaf mould suit it well.

CEREUS.—The best of these are of the *Jenkinsonii* breed, as they bloom so freely. All the Cactus tribe should be treated somewhat in the same way. Use sandy loam and lime rubbish for compost, with a little leaf mould. When in bloom and growing in summer water rather freely. By

the end of summer and the whole of autumn, if autumn-flowering kinds, give as much sun heat as possible, and gradually curtail water, and in winter give none at all unless the stems get very brown and shrivelled. We have had them dry from October till March, drawing what moisture they wanted from the atmosphere, and a perfect mass of bloom in May and June. As the buds swelled waterings were given, first slightly and then freely; but before giving them freely at the roots the stems were plumped out by frequent syringings.

R. FISH.

(To be continued.)

EVERGREEN SHRUBBERIES AS SCREENS.

A FEW days ago I called upon a gentleman residing in a villa, with pleasure grounds of some extent, formed by himself some twenty years ago. In speaking of the bounding shrubbery, which he said he had planted to screen his garden from the public view, he lamented most pathetically the gradual death of the evergreen shrubs which were originally planted, not half a dozen of which were alive, and even those were dying by inches, or I might say feet, every year. "What can be the cause," asked he, "that whilst the Elms, Poplars, Sycamores, &c., have become good-sized trees as you see, the Laurels, Bays, Hollies, Box, &c., have nearly all perished? It must be the soil or the blight that has destroyed them." After a moment's thought I said, "No, it is neither the soil nor the blight that has done the mischief; it is owing to planting *forest trees amongst the shrubs*, and allowing them, which they were sure to do, to choke the evergreens by overshadowing them, and taking up the nutriment for their support which the shrubs ought to have had. The consequence is, as you see, what was intended for a permanent living screen is no screen at all; the forest trees have not only destroyed the shrubs, but have also lost their lower branches, so that there is nothing to keep out the prying eyes of the public excepting the naked stems, or to protect your garden from the rude blast of cold winter or hurricanes of summer winds." "In such a case what is to be done? I do not like walls—they give my place the appearance of a prison or union yard. What should have been done at the outset?"

These queries, and the patent fact that the shrubs *had* nearly departed and the trees become useless as a screen, have led me to observe many places since in some cases in quite as bad a plight, and many more rapidly approaching to it. As I fear the shrubberies of many of the readers of THE COTTAGE GARDENER are in a similar predicament, I purpose in this paper to give my ideas on the subject, both prospective and retrospective; or, in other words, to plant so as to avoid the evil, and where it exists to adopt the best means to cure it.

First, then, how to avoid committing the error in planting that has led to such an objectionable effect as in the case in question. There are two methods of doing this—either to plant no forest trees at all, or to prune them in severely, so as not to shade the evergreens; and, when these latter have attained a height sufficient to answer the purpose, either to cut down the trees or remove them. I know in villa gardens near large towns, where privacy is desired as soon as possible, the owner is anxious to do so by planting trees, Limes or Elms, from eight to ten feet high at once, with evergreens in front. Hence many nurserymen near London, Manchester, Liverpool, &c., find a market for their overgrown forest trees, that would otherwise have been cut down for stakes or other purposes years before; but even this desire of privacy might be indulged and a permanent screen secured by obtaining tall evergreens from the same nurseries, and these have the advantage

of being a dense screen both winter and summer, and have an immediate effect, and an increasing one from year to year.

Many nurserymen, to oblige their customers, and no doubt to their own advantage, keep by them a considerable stock of large Hollies, Arbor Vitæs, Yews, Red and White Cedars, &c., and even Spruce and Scotch Firs for this very purpose; and in order to insure a safe removal they have them transplanted every second, or at the farthest, third year. Such plants, so removed at stated seasons, produce a dense mass of fibrous roots, which, when carefully taken up and as carefully planted, will be almost certain to grow. They have also this advantage, that they may be transplanted at almost any season of the year, excepting, perhaps (and it is perhaps only), during the hot summer months, when they are in full growth.

This is a profitable business to the nurseryman; for although it takes several years before evergreens can be got to such a size, and a considerable amount of expense is incurred in such frequent transplantings, yet the price they obtain for them repays well the time and expense bestowed upon them. Judicious gardeners see at once the advantage of such training for removal, and never grudge paying for it. I was in a large nursery near Liverpool lately, and saw a considerable plantation of evergreen and variegated Hollies so managed, and the price for the best, which were at least nine feet high, and tolerably furnished to the ground, was a guinea each; others of less size fifteen shillings, and so on in proportion to their height. Now, when we consider that these shrubs were probably from fifteen to twenty years of age the price was, as I considered, very moderate.

Where immediate effect is not so eagerly desired, then in planting a new shrubbery as a screen I would recommend the ground to be well drained if necessary, and afterwards trenched as deep as there may be tolerably good soil. This should be done, if possible, during summer, and finished by September. Then in October procure evergreens from two feet to three feet in height, and plant them rather thickly, that is, about a yard apart. The reason for planting them so closely is that they may shelter each other and sooner cover the ground. This thick planting, however, must be done with this proviso—that as soon as they touch each other and begin to interlace their branches every other one must be taken up. They will either serve to plant in some other part of the grounds, or they may be parted with to a nurseryman, who would gladly purchase or exchange for them at a considerable profit to the owner. The rest that are left in the plantation will now have space and air to extend their branches sideways, and, if a quantity of fresh rich soil is put on the ground to replace that which was probably taken away with the shrubs parted with, the others would quickly send their fibres into the fresh soil, and draw large supplies of nutriment therefrom, which would cause them to grow astonishingly. This thinning might be repeated, if necessary, again in three or four years with great advantage.

I have thus, I trust, proved how a dense screen of evergreens might be obtained most effectually. If, however, the objects sought to be concealed should be houses or unsightly buildings of any kind, I would then advise the back row of the shrubbery to be, where they would grow, Spruce or Scotch Firs, intermixed with compact-growing deciduous trees, such as Limes or Lombardy Poplars; but where the Firs would not grow, owing to the smoke of a large town, then I would plant Lombardy Poplars only, with the evergreens in front.

The last branch of my subject is, What is to be done with a place in the condition I described on opening this subject? The most effectual method would be, of

course, to cut down the overgrown, naked trees, stub up their roots, give the ground a deep trenching, adding fresh soil and dung to renew its strength and power of nourishing a fresh plantation. Then go to the nearest nursery, and procure at least one row of large, ready-grown, evergreen shrubs or trees, and thus obtain a screen at once; or take a medium course, cut down half or two-thirds of the old trees, and prune in severely the straggling branches of the remainder; then do as before advised, trench the ground, and obtain evergreens to fill up the naked void. This latter plan of preserving some of the best trees, and pruning them so that the evergreens would find support, air, and light, I have seen done very successfully, especially at a place where I first began to know the difference between a Lime and a Sycamore. That place was Wheatley Hall, near Doncaster, the seat of the late Sir George Cooke. I was then very young; but I well remember Sir George's son planting with his own hands evergreen shrubs in a plantation that had been thinned of many naked, straggling forest trees. Every evergreen was planted in a puddle, and very few failed. I saw the plantation ten years afterwards, and it was so dense and complete a screen that I could not see through it. The trees that were left formed a dense canopy overhead when in leaf that sheltered me, and no doubt the evergreens too, from a blazing summer's sun. I can only say that whoever has a naked plantation, planted originally to render his grounds private, but now letting in every wind that blows, and exposing all parts of the grounds to the gaze of every passer-by, let him follow out the advice I have given in any or either of the methods described, and I will warrant that in a very few years he will have as complete a screen as he need desire.

T. APPLEBY.

BRITISH POMOLOGICAL SOCIETY.

At a Meeting of this Society, Wednesday, July 8th, Thomas Rivers, Esq., in the chair, Mr. Hill, of Keele Hall, again exhibited a Grape called the *Black Eagle*, which he found was little known except in the neighbourhood of Liverpool. He described it as "a good variety for forcing, an abundant bearer, and well adapted for pot culture." The variety was evidently of the *Black Prince* family; bunch small; berry rather below medium size; nearly round; skin scarcely so thick as that of the *Black Prince*; flesh very sweet.

Mr. William Carmicheal, gardener to the Countess of Dunmore, Dunmore Park, near Falkirk, sent specimens of a seedling Peach, raised from a Peach stone received from America, and called the *Stirling Castle*. He described it as a fine-flavoured Peach, much superior to the *Royal George*, a free bearer, of vigorous habit, and not subject to mildew. The specimens were of first size, high coloured, and very large, but the flavour not fully developed. It was directed that his offer to send it again in a riper condition should be accepted.

Mr. James Sheppard, of Bedford Nursery, sent a seedling Black Cherry. It was a large black fruit, in size and colour resembling the *Black Tartarian*; flesh firm and sweet. It was considered that if it proved to be a free-bearing variety also it would be a useful market fruit.

Mr. E. Simpson, gardener to Lord Wrottesley, Wrottesley Park, near Wolverhampton, exhibited an Apple of last year, describing it as a valuable variety for culinary purposes, and keeping well twelve months after it is gathered, but mentioning that it had not this year kept so well as usual, owing to less fortunate storing, and that therefore the specimens sent were not equal to its usual quality. They were not considered sufficient to commend it to a high place amongst long-keeping Apples, especially in comparison with the *Easter Pippin*. It resembles somewhat the *Norfolk Stone Pippin*. A wish was expressed that it be exhibited again on a future occasion.

Mr. R. S. Yates, Fruiterer, 3, St. Ann's Square, Manchester, sent a box of Underhill's *Sir Harry* Strawberry, magnificent in size, and in excellent condition. Owing to

the recent heavy rains the flavour was not quite equal to its usual standard; but its capability for travelling was well illustrated by this exhibition, and the variety was considered to have fully sustained the opinion entertained of it at former Meetings. Mr. Yates reported that he had grown an acre of it, and found it surpass all other kinds for productiveness and general market purposes.

Mr. James Small, of Colnbrook Nursery, Slough, exhibited a fine basket of Ingram's *Prince of Wales* from plants which had been in bearing since the 9th of June, when the first fruit was gathered. He specially exhibited them that they might be distinguished from Cuthill's *Prince of Wales*, with which variety it was confounded, and he considered the character of the former had suffered from such confusion. The fruit exhibited was very large, firm, and full flavoured; it was considered superior in flavour to the examples of *Sir Harry* which were before the Council, but about equal if allowance were made for difference of latitude, distance of carriage, &c. It was mentioned by members of the Council present that its flavour was rather variable, but much finer this year than they had known it before. Mr. Small reported that he found the variety remarkable for the length of time the fruit kept good after it was gathered.

Mr. George Thompson, of Bramham Park, Tadcaster, Yorkshire, exhibited a specimen of a Strawberry supporter, which was much commended for its simplicity and cheapness, as well as for its apparent suitableness to the purpose. It consists of a simple ring of No. 10 (B.W.G.) galvanised iron wire, having three legs, about twelve inches long, of the same material. In fixing the leaves and fruit-stems are drawn together by the hand, the ring placed over them, and the legs (which are moveable) distributed to proper distances, and fixed in the ground as far as necessary. Not the least amongst its merits is that when out of use the legs go close together, and many hundreds of them may be hung up within a very small space.

REARING GOLDFINCHES.

GOLDFINCHES' nests will be found in hedges and Apple and Plum trees. The eggs are whitish, marked with red spots. Nestlings may be taken in May, but not till well feathered, as they are tender birds. Wrap them up warm, and feed them on the crumb of white bread soaked in milk, and then mashed into a paste with well-soaked rape seed. When full grown feed them on mixed rape and canary seed, and sometimes a bit of groundsel. When moulting give chopped egg and soft sponge cake *crumbled*. They require plenty of water for washing themselves in. Goldfinches need some care to rear, and are naturally delicate. Their most general complaint is a sudden falling down in fits, and they generally die in this way. They may be caught by suspending a bundle of thistles well smeared with bird-lime to a branch of a tree, and letting it swing with the wind. The plumage of Goldfinches is very beautiful, and their song is sweet and continuous. The cocks are distinguished from the hens by their higher colours, and the *red* of the head extending *beyond the eyes*.

In conclusion, let me tell the bird-keeper that he cannot commence bird-keeping with a better songster than the sweet-toned, beautiful, and sprightly Goldfinch.—RURIS AMATOR.

ON THE VINE MILDEW. BY HUGO VON MOHL.

(Translated from *Botanische Zeitung*, Aug. 19, 1853.)

DURING the last two years the disease was first observed, as well in the Tyrol as in Italy, after the Vines had blossomed and the ovaries had begun to swell. In the present year the malady appeared, if not sooner in point of time, still at an earlier period as regards the development of the Vine; for, in consequence of the cold, wet, unfavourable weather, the vegetation was many weeks behind that of former years, so that at the time of writing this (on the 29th of June) all the Vines at this place are not yet out of flower. Amici wrote to me from Florence on the 8th of June that Vine branches were brought to him the day before from the country, whose tendrils and unopened blossoms were infested with the fungus. The first diseased Vines

which I met with were at Venice on the 15th of June, on which day only a few scattered blossoms were expanded. The Vines of the Botanical Garden, as well as the vineyards of Murano, exhibited the disease, though only to a small extent. The peduncles and divisions of the blossoms, more especially, were infested with the fungus, which existed, though in small quantities only, on the bark at the lower end of this year's shoots, and also on the leaves and tendrils. I had doubtless overlooked the presence of the fungus for some days, but the mode of cultivation of the Vines in practice there, on high trellises, is, even with the help of a ladder, unfavourable to constant observation. The whole spring was unusually wet, and both immediately before and after the appearance of the disease the rain fell in torrents every day. This extreme moisture, combined in June with a rather high degree of temperature (72.5° Fahr.), was doubtless favourable to the development of the fungus, for news of the eruption of the malady arrived from different parts of the Continent a few days after. The malady, which had been observed ten days previously, first occurred to me at Bozen on the 23rd of June, already very generally diffused and in a higher state of development than at Venice, for not only the larger discoloured spots covered with mould, of which I have spoken in my former memoir, appeared on the bark of the new shoots, and the leaves were in part sensibly powdered with white dust, but the fungus was not rare on the young ovaries, which had attained two or three times the magnitude they had when the blossoms were first expanded, whereas at Venice two days previously they were still free.

Whether this early irruption of the disease is attributable to the unusual moisture of the present year, or whether it was simply observed at an earlier period than last year, because of the greater attention paid to the subject, must be left for future inquiry.

In consequence of the very great economical importance of the cultivation of the Vine in Italy, the malady has naturally engaged during the last two years the attention of many of the best observers in the country; and in several places, as at Florence and Venice, commissions have been established for its investigation. The principal point of contention to which these inquiries have given rise, and which in a certain quarter has been carried on with more vehemence than was quite seemly, is the question whether the Vines themselves are diseased, and the fungus is a consequence of the disease; or whether, on the contrary, the Vines themselves are healthy, and the disease is the consequence of the influence of the fungus on the plants, and carried by means of the parasite from one plant to another.

On another occasion I remarked that in consequence of the morbid appearances connected with the presence of the fungus being confined to the outer strata of the green-coloured organs, and in particular to the outer coat of the bark, the vegetative powers of the Vines had suffered no essential injury, and that consequently it was to be hoped that the health of the plants would not be impaired the following year, since the inner coats of bark as well as the wood appeared sound in that respect; so that, in general, only such parts were injured as must naturally perish in the course of the ensuing winter. This supposition that the general health of the Vine had suffered no injury has been fully established in those districts which I have lately examined (as also appears from information transmitted from every part of Italy), though they have suffered more or less during the two previous years, for the development of the shoots of this year has been most luxuriant, and the plants exhibit as vigorous a vegetation as can be seen anywhere. In this respect not the least difference can be found between those Vines which have never suffered from the malady and those which have been its victims for one or more seasons.

My observations of this year agree also with those made in Switzerland in this respect, that as regards the physical conditions of the locality, the geognostic character of the subsoil, the dryness or moisture of the place, the exposure to different quarters of the skies, &c., no definite relation could be found between any of them and the appearance of the disease. Greater differences of site cannot be imagined than between the vineyards of Murano, which are planted in a constantly wet soil, situated but a few feet above a sub-

soil saturated with sea water, and those situated in the plains of the country from whence I write, where a channel is formed between every two rows of Vines, which are frequently watered in summer; or, again, between those on the dry southern precipices of our steep mountains, ascending to a height of nearly a thousand feet. Still in these different localities the Vines were in some places spared, in others, during the last year, diseased to the total annihilation of the vintage, and all of them exhibited during the past May and June a diseased growth. Single plants, also, were often shown me by the proprietors which the year before were diseased to a very high degree, but this year were perfectly sound, and the contrary. When, as was the case in some peculiarly damp situations, as Murano, the Vines had suffered from the influence of exuberant moisture, and their leaves had in consequence assumed a yellow tinge, such plants were so far from being more palpably affected by the fungus, than those which looked perfectly sound and green, that on the contrary they were frequently altogether free. These circumstances render it altogether improbable that the Vines are suffering from a general disease, in consequence of which the local morbid phenomena and the fungus make their appearance.

Far less are the Vines affected by a local malady; for, as is proved by the phenomena which I am about to relate, the fungus does not appear on parts of the plant already impaired by disease, but, on the contrary, on perfectly sound organs, and the disease of the tissues begins precisely at those spots to which the fungus adheres by especial organs of attachment. Here, then, the connection is so clear between cause and effect, between the agency of the fungus and the disease of the plant, that the opposite view, which is not confirmed by a single positive fact, appears to me to be flatly contradicted.*

The only circumstance which can be adduced in favour of the predisposition of particular Vines for disease, and one which has been much noticed in Italy, is that certain varieties of Vine are more subject to be attacked than others, those, for instance, the skin of whose grapes is soft and the pulp juicy, while those with a firmer skin and harder flesh are spared. This, however, may be put aside as regards a peculiar susceptibility in the varieties just mentioned, inasmuch as the harder grapes, in consequence of the toughness of their tissues, present a greater resistance to the attacks of the fungus.

Independently, however, of the question whether the Grape disease is the consequence of a general indisposition of the Vines, one of great importance arises, viz., whether, in consequence of the mildew, the general health of the Vines is impaired. This, as said above, was not in the remotest degree the case in Italy, but it appears from the Journals of last year that in many more southern districts, as in Madeira, the Vines perished. It is conceivable, indeed, that the attack of the fungus may produce such a disease in the bark, and so derange the physiological functions of the leaves, that the plant may for a time be prostrated, though possibly the notion that the Vine is irrecoverably lost may be premature. It is, however, difficult to judge of the matter at a distance.

I proved by experiment during the course of this year, as in Switzerland in the preceding season, that the fungus does not spread from the Vine to any other plant. Similar fungi, indeed, occurred commonly on other plants, as on Roses, partly before the Vines exhibited any symptoms of disease, but none of these appeared to me to be identical with *Oidium Tuckeri*.

As regards the connection indicated above of the fungus with the cuticle of the green organs, and its power of pro-

ducing disease, if clear notions on the subject are desired we must not choose for examination those parts which are thickly covered with the fungus, but those in which it appears under the form of a delicate arachnoid web, scarcely perceptible under a lens. It is a matter of indifference, in this point of view, whether the bark of the green branches be chosen, the tendrils, the peduncles of the bunches, the integuments of the closed flower-buds, or the young fruit of but one or two lines long, provided the leaves are excepted.

With respect to the extension of the fungus on its first appearance, it must be considered as altogether local, for it occurs in insulated specks, which send out radiating threads from their circumference, and so becoming confluent, gradually cover, more or less completely, the surface of the organs which are attacked. On the branches the parasite occurs regularly on the lowest and oldest internodes; large spots covered with the fungus appear on these, and, at a later period, on the intermediate internodes, while the upper internodes (as is at present universally the case here) are altogether free. The fungus often spreads to the ovaries from the peduncles, which are already attacked before the blossoms expand, since the threads of the Mycelium, a short time after the corolla falls, creep over the nectary and involve the berries, commencing at their base. Meanwhile new centres of development arise from which the fungous web commences, caused probably by the oval vesicles or spores, which are produced at a very early period of growth upon the erect threads, and which germinate very readily and are found widely dispersed over every part of the plant, as, for instance, on the ovaries soon after the fall of the blossom, and then mixed with pollen grains.

The threads of the Mycelium+ creep constantly in a horizontal direction, adhering most accurately to the cuticle. While these are yet at a considerable distance from one another (Fig. 1) we perceive that they are branched in a pinnate manner; and since these branches are repeatedly divided in the same manner, in consequence of their crossing, the whole assumes the appearance of a net, which in a short time loses its regularity from the incursion of neighbouring threads. They have in consequence a tendency to adhere not only to the matrix, but also to each other (Fig. 3) where they cross; so that except strong magnifying powers be used, an appearance arises as if the branches were far more numerous and irregular than they are in reality.

In the older portions of the threads which lie in the middle of the fungal spots the fructifying branches begin to show themselves at a very early period, springing out on their upper side in a vertical direction, but not always perfectly rectilinear. While the creeping threads are divided into long articulations by distant and obscure septa, the upright threads are always distinctly jointed. They pass from a tolerably cylindrical to a clavate form (Fig. 4.), showing a greater quantity of protoplasm in the upper cells, but especially in the last. This at a later period swells out into an oval form, and is separated by a distinct septum, a greater or less number of little vacua being first formed in the protoplasm (endochrome). During the past spring I found, almost without exception, only a single oval utricle at the tip of each thread, whereas, in the autumn of 1851, two or three were generally present, forming a little necklace. I have already remarked in my former treatise that the size of these fallen utricles is subject to great variation, and must therefore be used with some circumspection in the distinction of species.

The connection of the fungus with the matrix is, as was before mentioned, of especial moment as regards the theory of the disease. To make this connection clear we must examine the earliest state of the fungus on the bark of the branches and tendrils, or on the young fruit. These organs appear, after various degrees of the evolution of the fungus, perfectly green, but for the most part numerous brown specks

* This notion, that the Vines are diseased only in consequence of the attack of the fungus, is most expressly defended in the report of the commission appointed by the Venetian Institute, whose reporters were Prof. Visiani and Dr. Zanardini (Rapporto della commissione nominata dall'I. R. Istituto Veneto di scienze, lettere ed arti per lo studio della malattia dell'uva; in den Atti dell'I. R. Istituto Veneto, &c. Tom. IV. Serie II.) It was of immense practical importance to give currency to this view, since the proprietors fancied that they had a remedy against the disease in cutting the Vines down to the ground, and the consequent renovation of the shoots, a process, however, which entailed a certain loss for some years. The Venetian Institute therefore received with thanks my letter printed in the Official Gazette of Venice of the 1st of June of the current year, in which I stated the accordance of my views in this respect with those of Dr. Zanardini.

+ The investigation of the Mycelium must be made with light reflected from above, for which purpose nothing is better than Lieberkühn's mirror. It is self-evident that such spots must be chosen as are protected from every cause of injury, or otherwise the tender threads will infallibly be damaged. It appears probable that this simple and obvious precaution has been neglected by Trevisan, who asserts with much earnestness (Sulla origine delle alterazioni che osservansi alla superficie delle parti verdi nelle viti affette dal bianco dei grappoli. Osservazioni di Vittore B. A. Trevisan, Padova, Ottobre, 1852), that fungi never grow on the sound cuticle, but always on already diseased patches.

are visible on the organs affected by the fungus even with the naked eye, but more certainly with a lens. Such specks must be chosen for examination, for those parts which are in a more advanced stage of decay, in which the specks have become enlarged, are useless for this purpose; in consequence of which, in my earlier investigations, in which I had before me the later stages of disease, the relations in question were not satisfactorily explained. Thus much is now clearly established: amongst the youngest threads of Mycelium, where they radiate on all sides from the margin of the spots, the cuticle retains its normal green; amongst the older parts of the threads, on the contrary, little brown specks (Figs. 1 & 3, *a a*) are visible. That this appearance is not accidental (for indeed the dead and fallen hairs, for example, on the under side of the nerves, leave little specks) is at once clear when a part of the cuticle is placed under the microscope, already covered with the network of the threads of the Mycelium, for in this case the dots occur with the greatest regularity only beneath the threads of the fungus, and therefore arranged after the fashion of a net. A good lens will exhibit this phenomenon, but perfect conviction can be obtained only by means of the compound microscope, employing for the purpose an objective fitted

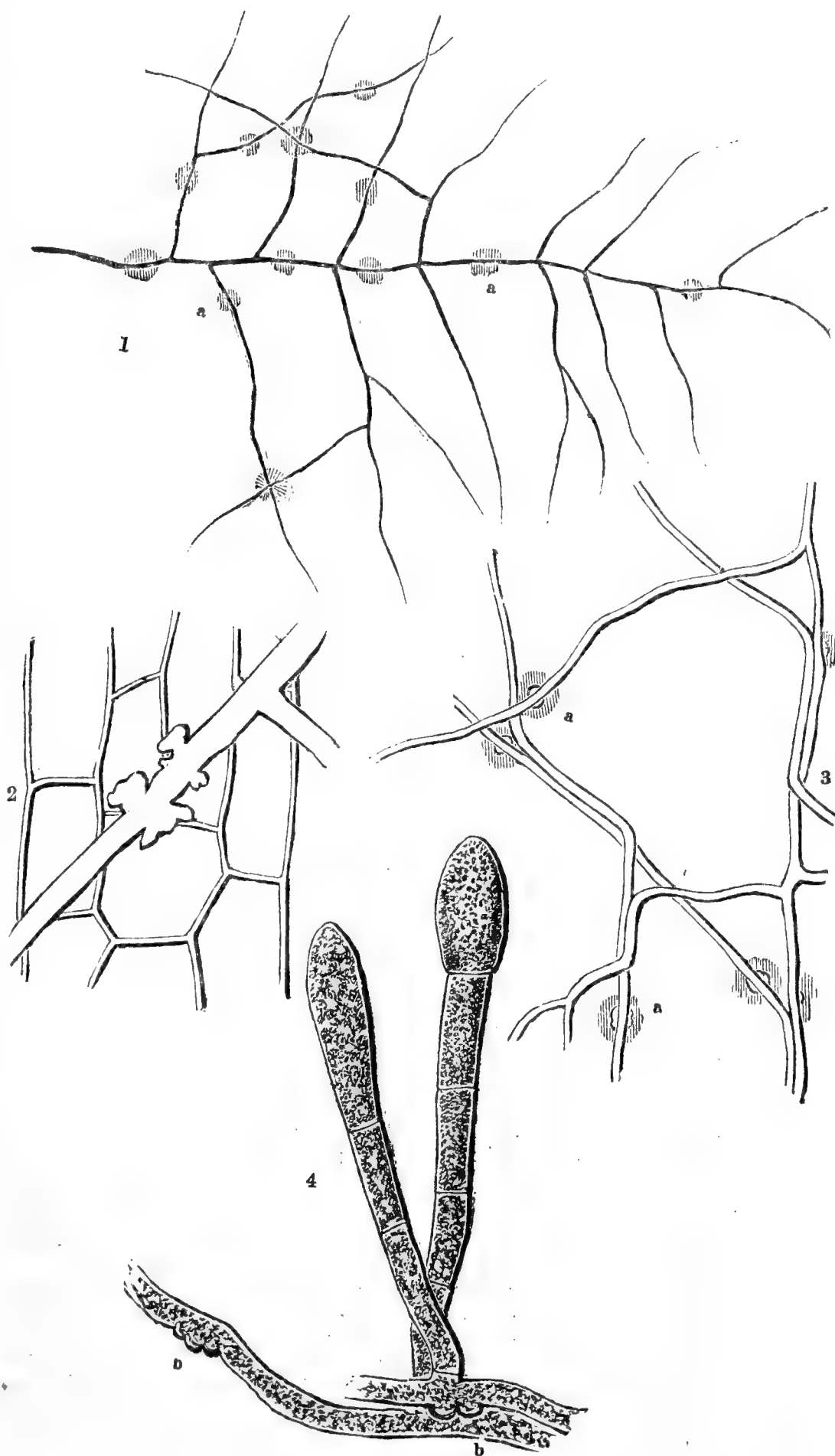
with Lieberkühn's mirror and adapted for opaque objects, since we can then see the most delicate threads and the connection of one spot with another.

If we examine the specks more accurately, which is best done with transmitted light in extremely thin horizontal slices of the cuticle, we perceive that the threads of the fungus have on their under side, exactly corresponding with each brown speck, an irregular lobed process, by which it is firmly attached to the epidermis (Figs. 2 & 4, *b b*). Those processes which are nearest the tips of the threads of the Mycelium are frequently as colourless as the threads themselves, but most of them have assumed a brown tint, with which a diseased state of the epidermal cells with which they are in contact is constantly combined. The contents of these cells become brown and contract irregularly, while the walls themselves acquire a similar tint, which is deeper in those which are lateral. This degeneration of the tissue, which at first is confined to the cells in immediate contact with the processes, seizes at a later period also the neighbouring cells to a greater or less extent. In this manner there arise upon the berries little knots which are perfectly visible to the naked eye, and on the branches the large brown spots described above.

There can be no doubt that we have in these processes the points from whence the parasitic fungus exercises its baneful influence on the Vine, as it is in contact with them that the cuticle becomes diseased, inducing the destruction of the outer layers of bark, and in the berries preventing the further growth of the skin, and, in consequence of the continued undisturbed growth of the pulp, the rupture of the fruit. At the same time the most certain proof that the disease of the Vines does really proceed from the fungus is afforded by these relations, and more especially in the above-described series of phenomena.

I have already stated above that the leaves are not eligible for this purpose. The processes and brown spots are not produced on the firm cuticle of the upper surface of the leaves, nor have I found them in the interstices of the veins of the under side, but only upon the cuticle of the veins themselves, where, however, their examination is very difficult, in consequence of the thickset hairs with which the veins are clothed. Connected possibly with this protection against the attacks of the fungus, which the parenchym of the leaves enjoys, is the fact that the growth of the leaves, even when thickly coated with fungus, is not impaired; the parenchym of the leaf does not become brown like the outer strata of bark, and the nourishment of the plant, at least according to the investigations recorded above, seems to remain normal.

The first discoverer of these processes was Dr. Zanardini, at Venice, who, on the 19th of July, 1851, made a communication respecting them to the Venetian Institute, and gave them the name of *fulcra*. I cannot, however, agree in many respects with the description which is given of them with reference to the observations of Prof. Visiani in the above-mentioned report of the Venetian commission. Visiani believes that he has discovered that they penetrate into the epidermal tissue after the fashion of roots. This I have never been able to establish, but I find, on the contrary, the cuticle perfectly entire (as Amici asserts, who, however, appears not to have recognised these organs), and the processes themselves attached only superficially, and in many cases even separable, together with the threads of the Mycelium (Fig. 4, *b b*) without injury. In a second point again I cannot confirm the observations of Visiani. He asserts that, at the place where the processes spring from



Various states of the Vine Mildew.

the under side of the threads, from two to four branches are given off in a radiating manner, like runners, which in turn develop new processes and a similar ramification; so that in this way the reticulate mode of branching and the quick development of the Mycelium are connected with that of the processes. A glance at Figs. 1, 3 proves that the mode of ramification is very different, observing a different law, and in no degree connected with the situation of the processes.

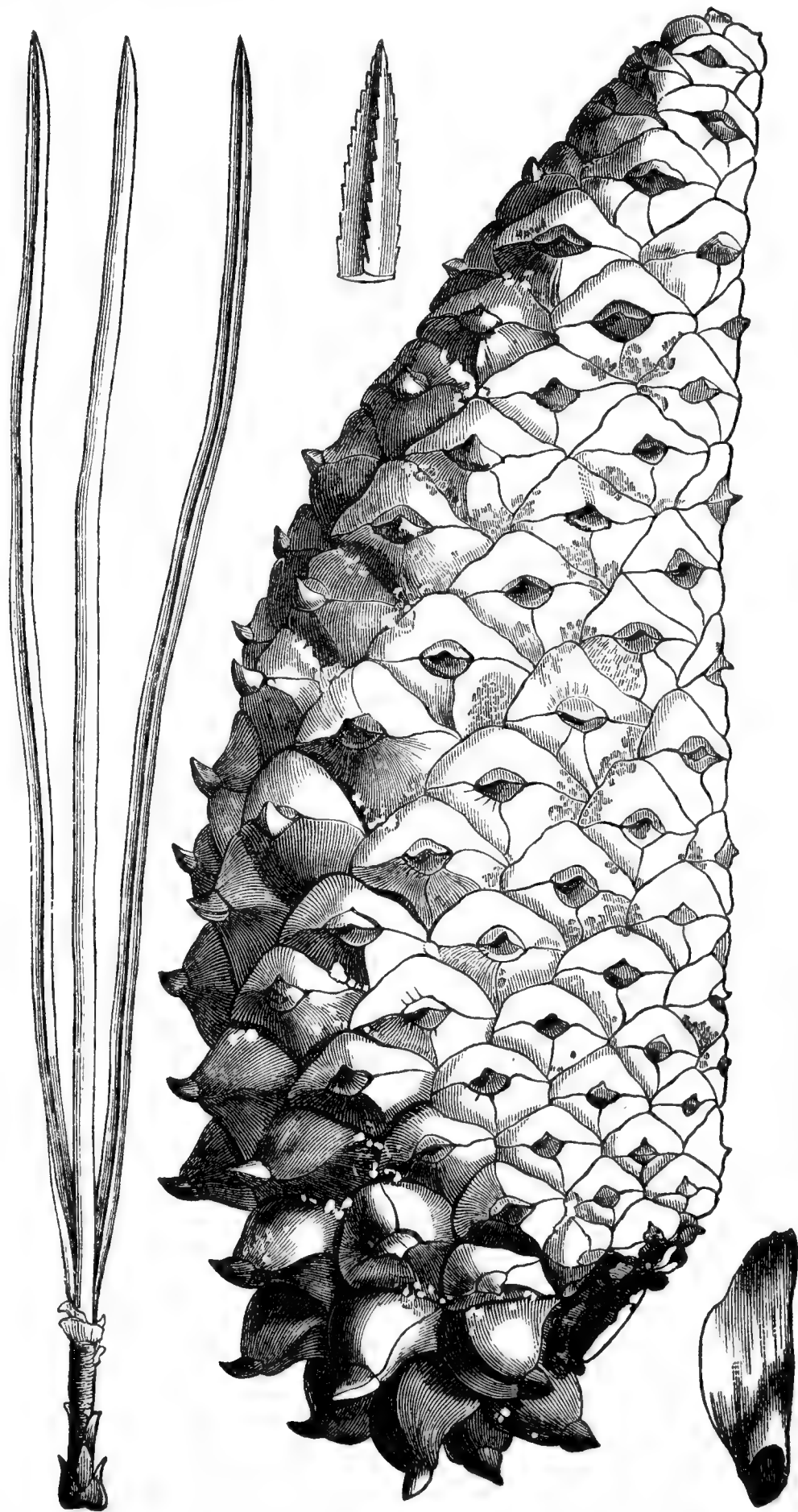
That the extension of the fungus during summer (independently of the immediate growth of the Mycelium) is ascribable to the dispersion and subsequent ready germination of the oval utricles, seems beyond all doubt. On the contrary, I was unable to discover where they are deposited through the winter, in what condition they are, and how the first development of the plant takes place in spring. One would imagine *à priori* that they pass the winter on the bark of the last year's shoots, or more especially on the buds, and so when they expand are ready to germinate on the young branches. I have, however, no express observations on these points: only thus much is certain—that, as was before remarked, the disease commences on the inferior internodes. Whether the spores retain their form, or it is the already developed Mycelium which en-

dures the severity of winter, is a point worthy of further investigation. In this respect the new fruit discovered by Amici is of the highest importance. He found, in October, 1851, that individuals of the oval utricles of *Oidium Tuckeri* enlarge, assume a yellow tint, acquire a cellular structure, and contain hundreds of extremely small elliptic somewhat curved spores, furnished with a little nucleus at either extremity. It is possible that these spores, developed late in the autumn, live through the winter, and in the following spring give rise to the new invasion of the fungus. The investigation of this matter is attended with no little difficulty on account of the extreme smallness of the spores. In September, 1851, I did not find this form of fruit in Switzerland, whether in consequence of the season not being sufficiently advanced, or that it is produced only in southern climes, points which must be decided by fresh observations. Cesati found similar fruit in Piedmont on *Oidium Tuckeri*, and I have just seen it in Bozen on an allied species, on the leaves of Hops, whereas Amici was led to its discovery in the Vine from the investigation of an *Oidium* on the common Gourd with the same kind of fruit. Should further investigation afford any key to this difficulty I shall not fail to return to the subject.—(*Horticultural Society's Journal*.)

PINUS TUBERCULATA.

LEAVES in threes, thickly set on the branches, bright green, rather stiff, broad and flat, with an elevated rib running along their middle on the inner side, four inches and a half to five inches in length on the wild specimens. Sheaths short, smooth, not more than half an inch long on the young leaves, very much shorter on the older ones, and only partially persistent. Seed leaves on the young plants from seven to eight in number, rather slender, and not very long. Branches few, stout, and rather irregular, with a roughish bark. Buds below the middle size, imbricated, and not very resinous or pointed. Cones mostly in clusters of four, but sometimes solitary or in pairs, and only produced on the main stem, of a long conical shape, five inches in length and two inches broad, the outer surface curved, the inner straight, widest near the base, and gradually tapering to the point, quite sessile, and uneven-sided at the base, very hard, of a light brown colour or silvery grey when old, very glossy, and full of resinous matter; they stand off at nearly right angles when old, although rather pendulous when young, and remain on the trees for years without even opening or shedding their seeds. Scales largest and most developed at the external base and down three parts of the outer side of the cone, deeply divided, much elevated, horizontal, and rather conical, particularly those near the base, the longest of which is three-eighths of an inch, terminated by a strong, sharp prickle; but, as they approach towards the point of the cone, they become much less elevated, more quadrangular, and blunter pointed; the scales on the inner side of the cone and round the point are very much smaller and quite flat, with a small dark brown prickle in their centre. Each cone contains fifteen or sixteen rows of scales, within each of which are two very small seeds, with wings three quarters of an inch in length.

This Pine was first discovered by Dr. Coulter to the south of Monterey, in lat. 36°, near the level of the sea, and growing almost close to the beach, intermixed with *Pinus radiata*. Mr. Hartweg found it growing on the Santa Cruz mountains, sixty miles to the north of Monterey by land. It is a tree of slow growth, and seldom attains more than twenty-five or thirty feet in height, with a trunk eight or ten inches in diameter. As hardy as *Pinus insignis*.—(*Horticultural Society's Journal*.)



NOTES FOR AUGUST.

THE experience of every season, more particularly of the present, ought to convince every person of the advantages of *trenching*, or deep digging, and of *mulching* the ground to prevent evaporation. Wherever such advantages have been overlooked the watering-pots during this dry season have been almost in constant use, and watering, unless it is persevered in and supplied in abundance, does but little good, the ground being so hot that the water soon evaporates.

A sowing of *Shilling's Queen*, *Sprotborough*, or any other good *Cabbage*, for standing over the winter in nursery beds, to be made about the middle of the month. At this period the *Winter* or *Prickly*, or, what is best, the *Flanders Spinach*, to be sown in a deeply-trenched, manured, and well-drained soil. *Lettuces* for standing over the winter to be sown about the same time; the *Hammersmith*, *Black-seeded Brown Cos*, and *Hardy Green* are good sorts for the purpose. *Onions* for spring use, or for an early crop next season, to be sown about the middle of the month—the *Tripoli* is a good sort for the purpose; and a sowing to be made of Cauliflower seed for handlights, or for keeping through the winter in frames.

Cabbage plants intended for spring use to be pricked out into nursery beds, that they may get stocky previous to their final planting. Plantations of *Brussels Sprouts*, *Coleworts*, *Cabbages*, *Savoy*, and *Endive* to be made as fast as the ground becomes vacant, either by the clearance of the *Pea*, *Bean*, *Spinach*, or early *Potato* crops; the *Endive* to be planted on raised beds four feet wide, to protect them from the injurious effects of a soil saturated by autumn and winter rains, to be hooped over in October, and protected by mats from frosts.

Celery to be liberally supplied with water during dry weather. A bed of *Early Horn Carrot*, sown now, will be useful by and by. If the weather is dry watering and surface stirring must be followed up amongst *Cauliflowers* and *Broccoli* for autumn use. A good forking of the ground five or six inches deep and a soaking of water between the rows of growing crops will excite them into rapid growth, when the ground will be soon covered with foliage, and excessive evaporation prevented. *Scarlet Runners* to be topped, and every seed-pod picked off, to produce a succession of gatherings.

The removal of all superfluous shoots from *wall trees* to be continued, and dry bean-stalks, cut in six-inch lengths, placed amongst the branches of *Peach* and *Nectarine* trees to trap earwigs. To check the gross habit of growth in any fruit tree it is advisable, when the fruit is gathered, to open a trench at a moderate distance from the tree, and to cut the strongest roots; it is the most effectual method of checking over-luxuriance where proper attention has not been given to obviate the necessity by means of shallow, well-drained borders. The plantations of *Strawberries* intended to stand for next season to be trimmed as soon as convenient; all runners and weeds to be trimmed and cleared away, to admit to the leaves and soil the beneficial influences of light and air. Fresh plantations may yet be made, and such runners as are in pots and intended for forcing to be well supplied with water.

As *Peaches* and *Nectarines* now begin to ripen, it will be necessary to fix nets or mats to catch the falling fruit, to be placed so loosely at the bottom of the trees as to form open bags. In these may be laid loosely a little moss, hay, or any other soft material, as after the most careful attention to gather by hand, which is the safest and best, some will fall, and if there is no means used to catch them they will be bruised and unfit for table.

The propagation of a stock of plants for the flower garden next season to be commenced immediately, that they may be well established in pots and exposed to the ripening influence of the open air before they are housed for the winter. By the late propagation of such plants there is generally a necessity of keeping them so close and warm as to induce a succulent and weakly growth. The propagation of *Calceolarias* may be postponed for a month or six weeks longer. Memoranda can now be more easily made of the stock that will be required for another season, with an increase or reduction of such sorts as the experience of the present season may suggest. The early part of the season

has been so unfavourable for bedding-out plants, that it is only now we begin to enjoy the beauties of the garden, which will make it comparatively but a short season; therefore every means should be used to keep them as gay as possible by going over the beds frequently, pegging down where necessary, removing decayed flowers, and by cutting back all shoots that encroach upon the edgings of the beds. Herbaceous plants to be tied up neatly, and the flower-stems of such as are unsightly to be cut off.

The seeds of *bulbous-rooted plants*, such as *Lilies*, *Tulips*, *Irises*, *Narcissi*, &c., to be sown as soon as they are ripe. They will succeed either sown in the open ground, covered lightly with fine soil, and left undisturbed during the winter, or sown in large pots and placed in a cold frame, where they will germinate in the spring. Advantage to be taken of showery weather for *transplanting seedling* *Wallflowers*, *Sweet Williams*, *Scarlet Lychnis*, *Antirrhinums*, *Foxgloves*, *Rockets*, *Columbines*, *Picotees*, &c., into the shrubbery borders, where they will produce a succession of flowers, if cut blooms are wanted, both useful and ornamental. Also to bud *Roses*, and if any had been budded the early part of last month to have their ties loosened, and to be well watered at the roots in dry weather.

The crust formed on flower-beds by frequent waterings to be loosened up. The pipings of *Pinks* to be planted six inches apart in beds of rich soil; the ground, if light, to be well trodden down before planting, as they succeed best on a firm bottom; water to be given after planting, and occasionally during hot weather afterwards, and a slight shade given by sticking branches in the beds. Advantage to be taken of showery weather for parting, by carefully pulling the roots asunder, and planting *Polyanthuses*; for pricking out seedling *Pansies*, and for planting out struck cuttings for next year's bloom; also for potting or planting out some of the earliest *Carnation* and *Picotee* layers: if potted to be placed in a frame for a few days, and, when watered, to avoid wetting the foliage. Any *Auriculas* that require it to be fresh potted and shaded.

The growth of *greenhouse plants*, and, indeed, of all trees, shrubs, and plants during summer, should be encouraged by all means, that as the autumn approaches the young wood may be gradually hardened off and ripened preparatory to the approach of winter. The young stock of *Fuchsias*, *scarlet* and other *Geraniums*, *Achimenes*, *Verbenas*, &c., by careful attention to their wants now, will produce a lively display for a few months. During the continuance of heavy rains it is advisable to take under shelter any of the more tender sorts of greenhouse plants, and to return them to the open ground, when a spell of hot weather sets in, to mature their wood.

To bloom *Mignonette* in winter it is recommended to sow the seed in the beginning of the month in 48-sized pots, in a soil composed of good loam, moderately enriched with rotten dung, with any rough drainage at the bottom, watered, and placed in a frame or pit, and to be protected from heavy rains. The plants to be thinned to four or five in each pot, and any premature flowers to be pinched off; when removed to their winter quarters to be set in an airy situation near the glass. Sometimes small seedlings taken up from the open ground towards the end of the month, shaded for a few days, and treated as recommended above, succeed very well. To produce a succession from the same sowing by placing a few in a pit or frame, or in any situation warmer than a greenhouse, they will come into bloom a little earlier than the rest.

Cinerarias for early blooming should now be growing freely, to be shifted when necessary, for if they are intended to form large specimens for flowering in winter they must not be allowed to sustain a check after this time. Preparations should be made for the housing of the principal plants in September that are now in the open ground; the shelves to be well scrubbed and washed; all crevices and corners to be cleaned out, to destroy all kinds of insects; and if the greenhouse wants painting, the sooner it is done the better, that the smell from white lead and turpentine, which is injurious to plants, may have evaporated before the lights are put on again.

Towards the end of the month a few of the most showy *annuals*, such as *Nemophila insignis*, *Collinsia bicolor*, *Clarkia pulchella*, *Erysimum Perofskianum*, &c., sown in pots

and kept in a cold frame during the winter, will assist to enliven the greenhouse in early spring. To succeed with *Hyacinths* the sooner they are procured and potted the better. We are told that in Holland the first crop of forcing *Hyacinths* is potted about the first week in August. The excitement of the foliage is prevented until the pots are full of roots by a thick covering of sand, tan, or leaf mould. In about six weeks the pots are full of roots, when they are removed to cold frames and kept close to the glass, with plenty of air. The natural warmth of the end of September and the whole of October will excite the foliage and flower-buds very gradually, when, as compared with our practice, the bulbs can hardly be said to be forced at all. The practice of taking advantage of the natural warmth of the autumn may be extended to many other plants intended, by gentle forcing, to produce winter flowers.—WILLIAM KEANE.

STAMFORD FLORAL AND HORTICULTURAL SOCIETY.

(From a correspondent.)

THE first open air Exhibition of this Society was held on Wednesday, the 15th of July, in the grounds of O. Edmonds, Esq., opposite Rutland Terrace, Stamford. This Society, which was established in 1835, has this year been endeavouring to regain its former position, and at the same time to make its Exhibitions both popular and useful; and the attempt must be admitted, by all who were present on Wednesday, to have succeeded far beyond the calculation of its most sanguine supporters, and strongly illustrates what can be accomplished when energy is timely and usefully directed.

Since the formation of the new Committee, who are not all practical horticulturists, the number of subscribers has been tripled, and the Committee have, of course, had the means of holding out greater attractions than formerly both to exhibitors and visitors. The consequence was that on Wednesday a highly successful Exhibition was the result. The principal prize offered was a Silver Cup, value £5, for the best twelve cut Roses, three blooms of each, which fell to the lot of Messrs. A. Paul and Son, whose stand contained some first-rate blooms, and, considering the season, we should say they could not be surpassed, one specimen of *Louis Peronnay* being the largest Rose we ever beheld. The stands of other competitors in this class were little less conspicuous for size, colour, and quality. The Amateurs' Medal for twelve single cut blooms was awarded to Captain Mannsell, of Thorpe Malsor, near Kettering, for a stand of very high-class blooms. The collections of stove and greenhouse plants from Messrs. Wood and Ingram, of Huntingdon, and Messrs. Walters and Daniel, of Oakham, were good, as were also those in the Amateurs' Class from the gardens at Burghley.

The cut flowers from Mr. Draycott, of Humblestone, Leicester, the Carnations and Picotees of Messrs. Wood and Ingram, and the Hollyhocks of Messrs. Paul were deservedly admired. The objects, however, which seemed most to attract the attention of the public, and which certainly contributed much to the effect of the Show, were two devices; one a magnificent design, about fifteen feet high, representing the temple of Minerva, from Mr. Osborne, gardener to Captain Grantham, of Ketton. The other, which obtained the second prize, was not strictly a device in flowers, but a model of a garden, with flower-beds, fountains, rockwork, and growing Ferns, exhibited by Messrs. Walters and Daniel, and showing that a vast deal of time, skill, and patience had been absorbed in its execution. The fruit was exceedingly fine and rich, and the Grapes from Burghley, and those from Mr. Baker, of Leicester, and the Earl of Gainsborough, could scarcely be excelled.

The prize offered by the Marchioness of Exeter for the best drawing-room bouquet was well contested for, and was awarded to Miss Willis, of Shillingthorp. Judging from the anxiety amongst the fair sex to ascertain the result of this award, we shall expect to see this prize, if given next year, add much both to the interest of the Exhibition and the number of its fair attendants.

The arrangements and classification of the plants, under the superintendence of Mr. Kidd, gardener to T. Tryon, Esq., of Bulwick, and Mr. Ewart, gardener to the Earl of

Westmoreland, were well carried out. The Committee and Censors, however, experienced some little difficulty in consequence of the marquees being placed at a considerable distance from each other; but this inconvenience was more than compensated for by the crowds of visitors being divided, and each one being enabled to get a view.

Out of the 5000 visitors who attended we did not hear one expression of dissatisfaction. The neighbourhood of Stamford is an affluent one, and we feel sure is well suited for a first-rate horticultural exhibition; and we do not hesitate to say, if the Committee continue to exert themselves as they have done this year, that the Stamford Horticultural Society will become one of the best and most useful in the midland counties.

NEW BOOK.

THE HOUSEHOLD ENCYCLOPEDIA.*—Beyond all comparison this is the most useful work that was ever offered to the manager of a household, and the more useful because its alphabetical arrangement renders reference to its contents so easy. Its information evidently is derived from the most reliable sources, and there is no more science mixed with its details than is requisite to render the practical portions thoroughly understood. It embraces information relative to "all domestic requirements, whether it be for cooking a potato, binding up a cut finger, baking a loaf, brewing a barrel of beer, curing a smoking chimney, mending a broken glass, removing an ink stain, cutting out a shirt, dyeing a gown, managing servants, or providing for parties." The first page is a fair specimen, so we extract it:—

"ABERFRAU, or BERFRO CAKES. Half a pound of fresh butter beaten to a cream; mix with it $\frac{1}{2}$ lb. of finely-powdered loaf sugar; add slowly $\frac{1}{2}$ lb. of best flour. Rolled thin, cut into shapes, and baked in a quick oven for a short time. Met with chiefly in Anglesea.

"ABSCESS is a collection of matter arising from previous inflammation. This may be in any part of the body, and what are commonly called boils, whitlows, imposthumes, &c., are all abscesses. When the inflammation first appears treatment ought to be adopted to allay and remove it, but when this cannot be effected then suppuration, or 'coming to a head,' should be promoted, the matter discharged by opening the head, and the wound dressed.

"To allay inflammation leeches may be applied, a purgative of Epsom salts be taken, and slight doses of James's powder, only sufficient to produce slight perspiration and depression. Cold lotions formed of half a pint of vinegar, mixed with two parts water, should be applied to the inflamed part. To an inflammation of the eye the lotion should be applied warm. The diet should be light and diluting, such as broth, gruel, and vegetables. Meats and stimulants of all kinds must be avoided. If, notwithstanding this treatment, the heat of the part increases, the tumour enlarges, attended by more pain and pulsation, then promote its suppuration by applying bread-and-milk poultices, warm and large, and its activity is promoted by putting an onion, raw and chopped fine, and sprinkled over the poultice before applying it. The poultice should be renewed twice daily at the least. When the thinness of the skin on the most prominent part of the abscess and the appearance of matter show that it is ripe, open it with a lancet, or with a very sharp-pointed pair of scissors; make the opening large. Press out the matter, and continue the poultice until, from being thick, the discharge becomes thin and watery. Then discontinue the poultice, and put on a plaster spread with yellow basilicum or calamine ointment. The last is commonly called *Turner's cerate*.

"ABSTINENCE FROM FOOD. From whatever cause this may have arisen, if the abstinence has been for a

* *The Household Encyclopædia, or Family Dictionary of everything connected with Housekeeping. Embracing Cookery, Confectionery, Preserving, Pickling, Baking, Brewing, Wine Making, Clothing, the Cellar, the Dairy, the Larder, the Laundry, Perfumery, Dyeing, and Domestic Medicine. With the Treatment of Children; Management of the Sick Room; the Sanitary Improvements of the Dwelling; the Duties of Servants; and full Information relative to all other Subjects connected with Personal and Domestic Comfort.* By an Association of Heads of Families and Men of Science. London: W. Kent and Co., 51 and 52, Paternoster Row. Winchester: Hugh Barclay, High Street.

lengthened time—as, for example, twenty-four hours—the party abstaining should not at first take solid food, but either a little broth or oatmeal gruel; after that a little light pudding. The quantities should be small at a time, and no full meal should be partaken of until after a day of this gradual nourishing has passed. Abstinence from food, when the stomach is disordered, is beneficial, and it is very objectionable then to tempt the patient to eat. The stomach requires rest—let it have what it needs. We all eat much more than nature requires, and Mr. Abernethy was quite right in considering that most of our diseases arise from our ill-treatment of our stomachs. Every one should read Mr. R. Chambers' complaint, supposed to be uttered by the Gastric Juice, the chief agent in digesting our food. The human frame can endure total abstinence much longer than is commonly believed. Anne Moore, 'the fasting woman of Tutbury,' though an impostor, and finally detected, lived for nine days and nine nights without food.

"ACCIDENTS (CAUTIONS TO PREVENT). 1. As most sudden deaths come by water, particular caution is therefore necessary in its vicinity.

"2. Stand not near a tree, or any leaden spout, iron gate, or palisade, in time of lightning.

"3. Lay loaded guns in safe places, and never imitate firing a gun in jest.

"4. Never sleep near charcoal; if drowsy at any work where charcoal fires are used, go out into the fresh air.

"5. Carefully rope trees before they are cut down, that when they fall they may do no injury.

"6. When benumbed with cold beware of sleeping out of doors; rub yourself, if you have it in your power, with snow, and do not hastily approach the fire.

"7. Beware of damps.

"8. Admit air into vaults by letting them remain open some time before you enter, and scatter powdered lime in them. Where a lighted candle will not burn, animal life cannot exist; it will be an excellent caution, therefore, before entering damp and confined places—as wells, privy vaults, cellars, &c.—to try this simple experiment.

"9. Never leave by themselves saddle or draught horses while in use, nor go immediately behind a led horse, as he is apt to kick.

"10. Ride not on footways.

"11. Be wary of children, whether they are up or in bed; and particularly when they are near the fire, an element with which they are very apt to amuse themselves.

"12. Leave nothing poisonous open or accessible, and never omit to write the word *Poison* in large letters upon it wherever it may be placed.

"13. Whenever you feel very uneasy tell your distress early to a steady friend."

SMALL DRONES.

If my memory serves me I think Keys in his book makes mention of small drones, and, as far as I remember, he does not consider them a *lusus naturæ*, but assigns them a position and office in every properly constituted hive. There must, however, be some mistake here, as most unquestionably they are not seen in every hive, and are but seldom seen in any.

A small drone is, in truth, a *rara avis*, and may be considered as holding a somewhat analogous relation to the bee commonwealth which dwarfs and pigmies hold to ours. I have seen them twice and handled one once. The first occasion was on the 28th of May, 1846; the last on the 10th of June, 1857. On both occasions they were the forerunners of their sex. He of the first date had it all to himself for fully a week, and no doubt considered himself no small fly, being the one and only lord of that bee creation. The other had not time given him thus to plume himself on his singular dignity, as the day after his appearance others of the approved shape and size sported dronefully about, so seriously offending his pigmyship, that I suppose he straightway put an end to his brief existence, as he was no longer seen or heard.

I am prevented from adopting the suggestion of "AN OLD APIARIAN," page 221, that they might be reared in

old contracted combs, from the fact that neither of the hives in which they appeared was one year old. "A dark-coloured common bee may be mistaken for a small drone;" but a small drone, when seen, cannot so be mistaken. From their peculiar formation they would strike the careless observer as being larger and thicker than the working bee; but in reality they are not so, as a worker's cell can contain them. This bulky appearance may be thus accounted for: they do not taper at their lower extremity, as do the workers; their head is rounder, and their wings appear broader. Upon a more close examination of them the last ring of the abdomen is found fringed with hairs, and the distinctive marks of the sex are proportionably developed.

The startling theory of "AN OLD APIARIAN" on the sameness of the queen's eggs—startling as well for its novelty as for the able and plausible manner he enunciates it—I for one cannot adopt. The cases of the "bird" and "female" are scarcely, I think, analogous. We have it on the authority of Dr. Bevan that worker bees have been known to destroy drone eggs which the queen by mistake had deposited in worker cells; and there is no case on record of the workers being ever known to make a queen out of a male egg. The malformation of an unimpregnated queen does not unfit her for depositing eggs in worker cells, as she has been often seen to do so. It signifies nothing that she cannot reach the bottom of the cell, for it may be frequently seen that even impregnated queens so deposit their eggs, which misplacement is remedied by the bees, not by removing the egg to the bottom, but by elongating the cell.

Differing from "AN OLD APIARIAN" on this point, I cordially agree with him in believing that the nutriment administered to a grub destined for royalty has something to do in the matter of that wonderful transformation. Huber assures us that there are such insects as *fertile workers*; he caught one in the very act of laying. These are never found except in hives where artificial queens have been reared, and the only plausible solution of this phenomenon that I have ever seen is that given by Dr. Bevan, who says: "Probably the fertility of these workers is occasioned by some royal jelly being casually dropped into their cell when grubs, as they invariably issue from cells adjoining those inhabited by grubs that have been raised from the plebeian to the royal rank." It is a remarkable fact that these fertile workers never lay any but drone eggs.—D. G. M'LELLAN, *Rutherglen*.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE July Meeting of the ENTOMOLOGICAL SOCIETY was held on the 6th inst., the chair being occupied by W. W. Saunders, Esq., F.R.S., President of the Society. After the confirmation of the minutes and the announcement of donations to the library received since the last Meeting Mr. Samuel Stevens exhibited a box of beautiful insects received from Mr. Plant, captured to the north of Natal, in South Africa, containing many new species, as well as specimens of the remarkable *Moluris Barthelemyi*, supposed not to have been previously possessed by any English cabinet. Mr. Westwood stated, however, that there were specimens in the Hopeian collection at Oxford.

Mr. Stevens also exhibited a living specimen of the rare *Gnorimus variabilis*, which he had reared from the larva state, which had lasted not less than three years, the insect feeding on oak wood.

Mr. Douglas exhibited *Stenolophus elegans*, a rare species of Carabidæ; also the rare *Trinodes hirtus*, and the larva of *Tiresias serra*, taken in the bark of trees at Richmond Park.

Mr. Ianson exhibited a number of new and rare species of Beetles recently captured, including *Lamophlaeus clematidis*, found in the stems of the common Traveller's Joy; *Plinthus caliginosus*, taken near Dareuth; *Pseudopsis sulcatus*, of which only three English specimens had been previously captured, and which was taken by Mr. Ianson in a Boletus growing on a Walnut tree in Headley Lane, Surrey; also *Cryphaleus binodulus* of Ratzeburg, and a new British species of Scolytus (*S. rugulosus* of Ratzeburg), much

smaller than the *S. destructor* of the Elm, of which numbers had been found by Mr. Groves in the stems of a Swan-egg Pear tree, into the branches of which it had burrowed in great profusion. It also differed from *Scolytus destructor* in its habit of burrowing deeply into the wood of the tree in order to assume the pupa state. It belonged to the second division established in the genus by Ratzeburg, and was nearly allied to *Scolytus multistriatus* of Marsham.

Mr. Westwood stated that it appeared to him to be identical with the *Scolytus hæmorrhous*, described long previously by Kollar in his work on insects destructive to fruit trees, translated by Miss Loudon (page 263). A number of specimens of the insect were brought for distribution among the members by Mr. Groves.

Mr. Foxcroft sent for exhibition various rare insects captured by himself in Scotland, including the beautiful scarlet Glowworm, *Lycus aurora*, of which a notice of the habits was also given.

Mr. Reading, of Plymouth, exhibited a living specimen of the fine Beetle, *Carabus intricatus*, taken in damp woods near that town. He had kept it alive for two months, feeding it upon Lepidopterous larvæ.

Mr. Westwood exhibited some leaves of a species of *Bauhinia* brought from Central Africa by Dr. Livingstone, infested with a species of *Psylla*, which had caused an exudation of a gummy nature upon the surface of the leaf, enveloping the pupa of the insect. These patches were scraped off by the natives and eaten as a saccharine luxury, in the same manner as the wo-me-la of Australia (the produce of a similar insect) was collected and eaten by the aborigines. He also mentioned that he had recently observed a remarkable case of deviation of instinct in a specimen of the Solitary Wasp, *Odynerus antelope*, which, instead of making a cell for the reception of its nest, had made use of some old hexagonal cells of the common hive Bee, into each of which it had introduced a store of green caterpillars for the food of its young when hatched from the eggs deposited with the caterpillars.

Mr. Robinson exhibited a series of British species of *Cryptocephalus* recently captured in Kent.

Mr. Pascoe gave an account of the Congress of Entomologists and Botanists recently held at Montpellier, in the South of France, which was attended by about five hundred members, Count Jobert being the President. It did not appear that much scientific matter had been despatched, the meeting being rather of a social kind. He also gave an account of a new entomological work recently commenced in Paris by Mr. Thomson, a very rich American entomologist resident in that capital, the title of which is *Archives Entomologiques*, containing monographs and beautiful coloured plates. He also announced the return of M. Deyrolle from Senegal, where he had been despatched by Messrs. Thomson and other French entomologists on an entomological excursion, during which he had collected upwards of 5000 specimens. His return had, however, been accelerated by illness.

On the motion of Mr. Douglas a vote of thanks was passed to the President for the entertainment given to the members of the Society at the annual excursion to Reigate on the 26th ult.

QUERIES AND ANSWERS.

COLLINSIA BICOLOR ALBA.

"Your public opinion regarding the true *Collinsia bicolor alba* will much oblige me. I sent you a packet of the variety raised by me, and I was led to understand that you had the foreign variety. I have both; at least, I received a packet from Messrs. E. G. Henderson and Co., and one from Mr. Wm. Thompson, of Ipswich. These two kinds are the same; the latter, a foreign sort, is more robust in habit. It has a coarser and more dentated leaf; the flower-stems at top in general appearance have a yellowish cast, which usually causes the bed not to look nearly so well as my variety, which is dwarfer, the foliage a deeper green, the plant more compact in growth, and the general appearance of the bed I consider very superior to the foreign variety; at least, every one who has seen the two growing in beds side by side up-

hold this. I hope you have noticed the difference of the two in all respects, as I should like their true characters given. My variety comes into bloom eight or ten days earlier than the foreign, and a more perfect white bed cannot be seen."—WM. MELVILLE.

[We had just proved that there is a difference between the white *Collinsia* from the Continent and the one sent us by Mr. Melville, but we did not consider it of any practical value. We have seen a third kind since, which we prefer. The old *Collinsia bicolor* is evidently "broken up" into sports, like the *Swan River Daisy* and many other flowers.

Eucharidium concinnum broke into *grandiflorum* under the third trial of domesticity or cultivation.

We destroyed the two kinds of white *Collinsias* before they ripened seeds, as we have done and shall continue to do with all plants and seeds which we receive for trial only.]

TO CORRESPONDENTS.

HOLLYHOCKS FROM BUDS (Helen).—July is the month for thus propagating these flowers. When the Hollyhocks are tied up to the stakes for the last time all the inferior stalks, or those that are likely to hide the rest too much from the sun, or, indeed, any that are too much crowded or ill placed, were cut away as useless formerly, but now they are made into cuttings to increase good sorts, or save one the trouble of sowing seeds of them every year. Every leaf on a shoot will make a cutting if you take a part of the stem and the eye at the bottom along with it; but the easiest way is first of all to cut the shoots into as many pieces as there are leaves or joints, then to split the pieces down the middle, so that every half has its own bud and leaf-stalk; the blade of the leaf is not necessary, but it is best to keep two inches of the leaf-stalk; the soft pith in the centre of the split parts should be scraped out, as it is liable to cause damp or mouldiness; the pieces are then planted an inch deep in sand, under a handglass or a cold, close frame, and sometimes with no better help than the shade or shelter of a north wall; part of the leaf-stalks are above the sand, and mark the centre of each cutting; the bud at the bottom of the stalk will soon push, make roots, and be in all respects as good as a seedling, besides being true to the sort.

WALTONIAN CASE (A Subscriber).—We believe you can obtain it in London of Messrs. Kernan, Seedsmen, 4, Great Russell Street, Covent Garden.

PHLOX OMNIFLORA COMPACTA AND DELPHINIUM FORMOSUM (Verax).—This variety of *Phlox omniflora* is quite hardy, and makes a capital white bed. The seeds of *Delphinium formosum* will vegetate as freely as Mustard and Cress if sown any day from the 1st of February to the 20th of August inclusive. One of the royal gardeners sent a packet of his own saving to the Experimental, where we ourselves have proved the answer to your question.

GARDEN PLAN (W. J. W.).—The plan of your garden is very good if it pleases you. We should like one ourselves, but it creates too much work for the space for us to recommend it to others. You mistake the effects of the roller on a walk, and the Box itself is the stay to the walk, not to be stayed as you think. A man must learn to draw a roller along close to the side of any figure in Euclid which forms part of an oval, round or straight on. Yea, there is not an angle in the book but must be done, that is, rolled, if it is laid out in gravel; but concrete saves rolling about ninety-six per cent., and you must concrete quite up to the Box, or wall, or stone, or tile edging, just the same as for grass.

NAMES OF PLANTS (B).—Your Grass is the *Phalaris arundinacea*, variety *picta*, or the Variegated Reed-like Canary Grass. It is, as you say, a very pretty plant, and, although of creeping habit, forms a very ornamental bunch of itself, distinct upon the cooler part of a lawn, or near the sides where lawns run out to the water. The Fern is the *Nephrolepis exaltata*, an ornamental evergreen stove species. (Harrie).—Yours is *Eutoca viscida*.

PRESERVING GREEN PEAS (J. Cunningham).—Pick them when full grown, shell them, dry them gently but thoroughly, and then store them in canvass bags in a dry place. When required for use soak them in water for a few hours until plumped up, and then boil them.

WATERPROOFING A SOD ROOF (A Subscriber).—Beat the sods very smooth and coat them with thin mortar. When this is quite dry paint it over with coal tar, and sprinkle this thickly with dry, finely-sifted lime rubbish.

BLIGHTED ROSE LEAVES (E. C.).—The yellow spots on the leaves of your Rose trees are one of the numerous parasitical fungi just now so prevalent upon many plants—Peas and Grapes especially. The best remedy is flowers of sulphur dusted over the leaves whilst the dew is upon them. The best preventive of this mildew on Rose leaves is to have the soil over the roots of the trees well mulched, and water given abundantly over the mulch daily during dry weather. Liquid manure once a week would also be beneficial.

COTTAGE GARDENER'S DICTIONARY (J. G.).—A supplement ought to be published, but the proprietors do not seem willing to do so.

DIOSCOREA BATTATAS (A Lady Gardener).—In Nos. 375 and 379 you will probably find all you require. We allow the stems to trail upon the ground, but letting them climb will not injure them. Carnation seed should be sown in March. Buy our "Florists' Flowers for the Many."

THE POULTRY CHRONICLE.

POULTRY SHOWS.

JULY 28th, 29th, and 30th. SHEFFIELD, SOUTH YORKSHIRE, AND NORTH DERBYSHIRE. Sec., William Henry Dawson, Fig Tree Lane, Sheffield.

AUGUST 8th, 10th, 11th, and 12th. CRYSTAL PALACE. Sec., W. Houghton.

AUGUST 19th. BRIDLINGTON. Sec., Mr. Thomas Cape.

AUGUST 26th. BRADFORD. Secs., M. Brooksbank and H. Beldon, Esqs., 12, Queensgate Street, Bradford. Entries close August 18th.

AUG. 29th. CALDER VALE. Sec., W. Irvine, Esq., Holmefield, Halifax. Entries close August 15th.

SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.

SEPTEMBER 4th. SOWERBY BRIDGE. Sec., F. Dyson, Esq. Entries close August 26th.

SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Sec., Mr. H. Churchill, King's Head Hotel.

OCTOBER 1st and 2nd. WORCESTER. Sec., Mr. G. Griffiths, 7, St. Swithin Street, Worcester. Entries close Sept. 19th.

OCTOBER 7th. SOUTH WEST MIDDLESEX AGRICULTURAL SOCIETY. At Gunnersbury Farm, Ealing. Sec., J. Gotelee, Hounslow.

NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.

DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.

DECEMBER 30th and 31st. BURNLEY AND EAST LANCASHIRE. Entries close December 1st. Secs., Angus Sutherland and Ralph Landless.

JANUARY 4th, 1858. KIRKCALDY POULTRY AND FANCY BIRD SHOW. Sec., Mr. Bonthron, jun., Thistle Street.

JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.

JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.

FEBRUARY 3rd and 4th, 1858. PRESTON AND NORTH LANCASHIRE. Secs., Mr. R. Teebay and Mr. H. Oakey, Preston.

N.B.—Secretaries will oblige us by sending early copies of their lists.

POULTRY AT THE ROYAL AGRICULTURAL SOCIETY'S SHOW, SALISBURY.

JULY 23RD AND 24TH, 1857.

THE Royal Agricultural Society of England this year yielded to the solicitations of Salisbury, and decided on holding its Meeting in that ordinarily quiet town. What a change! Even the great "close" question was forgotten or laid aside, and all men and all parties united in an earnest desire to give a hearty welcome to the royal visitor. It is amusing to watch the effect of such an arrival. It begins at the railway station. The respectable officials know nearly all their regular customers; the porters know the very trunks; they are familiar with the weekly hamper of vegetables that goes up to the member's house while he is in London. There is a little influx of business on market days; but the traffic is so regular that if a dozen strange faces travel on one day they ask themselves what is going on. Only fancy, then, the effect of the first arrivals, and then the days of the Exhibition, the thousands of visitors, and the town. Oh, the demand for beds! Dusty, travel-stained men wandering about, each with a portmanteau or bag, all trying their best to scan faces, and, without any outward indication of a bed to let, asking that comfortable-looking man who stands at his shop door whether he can accommodate him for *just one night*. Then bands of music, acrobats, shooting galleries, glee singers, panoramas, dramatic performances, horsemanship, and photographic artists exercising their talents anywhere or everywhere, help to make up a scene which may well cause a commotion in a quiet town. Then every house has its banner, and most streets have their triumphal arches. Agriculture is welcomed in every possible language, and the plough becomes for the week the favoured emblem. It is, indeed, no small event that can thus change a town, or that can make beds worth a guinea per night. No better proof could be adduced of the estimation in which the Royal Society is held than the fact that its meetings are always followed by many thousands who incur no light expense to attend them. And these are not exhibitors anxious for the prizes that are to be awarded; they are thinking, clever men, and they look forward to this meeting as an annual lesson—they do not miss it. No one can see all that is to be seen without being convinced he has still much to learn. Some few years since steam was talked of as a probable auxiliary to agriculture. Then a few engines were exhibited, and spectators hoped and shook their heads. Last year, how-

ever, at Chelmsford, Boydell's engine steamed about, laying its own rail, going on rough and uneven roads, over heaps of stones, through soft places, heedless of the police, who assured the driver he *must* not come farther. And now at Salisbury this year the same and others were busy at work showing their capabilities, and giving a very practical idea of things to come.

The truth is the Society is one of progress, ever at hand to carry out any invention or discovery that may be serviceable to agriculture. Hence the magnitude of the Show. There is room and place to be found for everything that can teach a lesson or help the pursuit. It is only of late years poultry has been at all placed in the position it ought to occupy in the farm; and the Society, true to its vocation, at once offered a liberal prize-list, and added it to the yearly Exhibition. The late Earl Ducie, president at the Lewes Meeting, at once saw its importance, and went largely into it. His death was a great loss to the pursuit. The entries at this Show will probably never reach those of some of the great exhibitions confined exclusively to poultry, but they will always be numerous enough to carry out the intentions of the Society, and to point out to those whose interest it is to know it (and they are especially the most numerous on these occasions), first, the points to be attained, and next, the progress made towards them.

Few Societies deserve more credit for fixedness of purpose than the Royal Agricultural Society of England, and, true to its object, the premiums are offered for farm poultry. Thus the greatest amount is given to Dorkings, the fowls of the farmyard; Spanish, the producers of the greatest *weight* of food in the form of eggs; and Game, the hardiest of the tribe. This purpose was carried out by exhibitors. These three classes were the best. There will in most Shows be more numerous entries, but we have no hesitation in saying there will not be better birds seen anywhere than at Salisbury.

The *Dorkings* first on the list for adjudication were wonderful birds, and shown in capital condition. The prize-list must tell the names of the successful, and our task must be limited to calling attention to particular points and merits. Captain Hornby's pen was perfect; it was, nevertheless, hard run by Dr. Hewson, a new name. One pullet in this gentleman's pen was, we think, the best bird we have seen this year. Mr. Botham's Dorking cock was a perfect bird; but his pullets were out of condition and broody. Mr. Loder's were excellent birds, and very large. The adults were in better condition than we have ever seen them at this time of the year, and richly deserved their honours. Captain Hornby again headed the list, followed by well-known names—Messrs. Botham, H. Smith, of Cropwell Butler, and the Rev. T. L. Fellowes. The single cock class contained eight immense and perfect birds. Captain Hornby took first, and Mr. Fisher Hobbs second; Loder, Botham, and Popham were among the unsuccessful names. Let this speak. Mr. Fisher Hobbs showed four birds, and they justify us in repeating what we have before said—that we think this gentleman might challenge the world to show ten Dorking cocks.

Mr. Botham won easily in *Spanish*. Many in this class were deeply in moult.

There were very beautiful specimens of *Cochin-Chinas*, and we hope the breeders of these birds will work for their restoration to a high class, as they have merits that make them really valuable in a poultry-yard. The chickens seen at Salisbury encourage us to believe that the prize birds there began a career of success. Mr. Fowler took both prizes for chickens; Messrs. Fookes and the Rev. G. F. Hodson for adults. The latter were, some of them, in bad feather. Although, by the rules of the Society, the mention is confined to high commendations and commendations, yet the Judges expressed their opinions that they could not praise the *Cochin* chickens too highly. There was but one pen of *Brahma Pootras*; they were very good. Another pen was entered, but we are at a loss to know why, unless as a joke. They were described as "Buff, and bred by exhibitor," and were simply Rumpless fowls!

The *Game* fowls were beautiful, and richly deserved the high commendations of the Judges. The four prizes went to Lancashire, Dorsetshire, Salisbury, and Hampshire; the single cock prize to Birmingham.

It will be seen in every class that the winners are the names best known for goodness of stock and knowledge

of the points necessary for success in exhibitions. Thus in *Golden Hamburgs*, a very capital class, the Rev. T. L. Fellowes and Mr. J. Lowe were prize-takers, while Messrs. Botham and Mew took the honours of the Silver. The latter were not so good as the former. In the Spangled the Golden were also better than the Silver. Mr. Elston showed a very good pen. We know no birds that lose beauty of plumage towards the end of the season so entirely as the *Silver Hamburgs* of both classes. The *Polands* call for no particular remarks. The *Geese* and *Ducks* of every sort deserved especial notice, and furnished an almost uninterrupted success to Mr. Fowler, of Aylesbury. If we were to notice the best among the good we should select the Rouens for the honour.

Mr. Cother, of Salisbury, proved an urbane and highly competent Steward of poultry. The Judges were G. J. Andrews, Esq., of Dorchester, and Mr. Baily, London.

Here ends our account of this poultry, as the list of awards furnishes all details of the successful. Those who were not there may, perhaps, wish to hear something of the company, &c. The weather was glorious, but so hot. The attendance was unusually great, and the poultry most attractive. The space in front was densely crowded and packed during the Show. There was a vacant spot before the row of pens, and this was carpeted with human beings enjoying every variety of food and beverage. It required half an hour's good-humoured combat to reach the refreshment stand, and the orders rained on the *entrepreneur* for dozens instead of bottles. We never saw a scene of greater enjoyment. It resembled a monster pic-nic attended by tens of thousands (35,000 in three days). During our stay we did not see a quarrel, nor hear an angry word in the yard. The arrangements of the railway were excellent, and contrasted favourably with those last year at Chelmsford.

One topic more and our report will be ended. It is asked on all sides why the entries are not more numerous; and when we asked exhibitors why they did not send, the reply invariably was that there were too many formalities to observe, and that the expense of sending a man in charge of a few birds to stay a week in the show town was too great. It has long since been settled that agricultural shows are not complete without poultry, and premiums are offered for it at the meetings throughout the country. The numbers of persons who spend their time viewing the poultry, and the amateurs who have joined the Royal Agricultural Society's Exhibition, may show that they will support it. Every addition to the receipts tends to diminish the expense of the annual meeting, which weighs so heavily on the funds, and there is no reason why this branch should not be more productive. We would propose that all forms of entry should be done away with, except one stating, to the best of the exhibitor's belief, the age and breeder of the birds shown. Let the birds be received and sent off by persons appointed by the Society. Exhibitors do not ask the Society to incur any responsibility.

Let the Show be advertised like that of any other Society. The expenses will be met by raising the entry money of the pens, especially to non-subscribers; and power should be given to the Poultry Judges to withhold any prizes when the birds were deficient in merit. We believe acquiescence in these suggestions would insure a much larger entry and the attendance of some hundreds. It would also do that which we believe is the wish of this Society—it would enable numbers of poor men to exhibit, and also others who, though not of that class, still can never hope to show cattle or horses. The present rules require very little alteration; but unfortunately, for lack of advertising, they are almost unknown beyond the circle of members. Four advertisements in the poultry papers would bring in many entries, and, by associating numbers of new people with the Society, carry out its noble wish of the largest possible extension of practical good and usefulness.

DORKINGS (Chickens of 1857).—First, Capt. W. W. Hornby, R.N., Knowsley Cottage, near Prescott. Second, J. D. Hewson, M.D., Coton Hill, Stafford. Third, G. Botham, Wexham Court, Slough, Bucks. Fourth, R. Loder, the High Beeches, Crawley, Sussex.

DORKINGS (more than one year old).—First, Capt. W. W. Hornby, R.N., Knowsley Cottage, near Prescott. Second, G. Botham, Wexham Court, Slough, Bucks. Third, Rev. T. L. Fellowes, Beighton Rectory, Acle, Norfolk. Fourth, H. Smith, the Grove, Cropwell Butler, near Bingham, Notts.

DORKING COCKS (of any age).—First, Capt. W. W. Hornby, R.N., Knowsley Cottage, near Prescott. Second, W. F. Hobbs, Boxted Lodge, near Colchester. (Class commended generally.)

SPANISH.—First, G. Botham, Wexham Court, near Slough, Bucks. Second, Capt. W. W. Hornby, R.N., Knowsley Cottage, near Prescott. Third, J. K. Bartrum, Richmond Hill, near Bath. Fourth, J. K. Fowler, Prebendal Farm, Aylesbury.

SPANISH COCKS (of any age).—Prize, J. K. Bartrum, Richmond Hill, near Bath.

COCHIN-CHINAS (Chickens of 1857).—First and Second, J. K. Fowler, Prebendal Farm, Aylesbury.

COCHIN-CHINAS (more than one year old).—First, H. Fookes, Whitechurch, near Blandford, Dorset. Second, Rev. G. F. Hodson, North Petherton, near Bridgewater.

COCHIN-CHINA COCKS (of any age).—Prize, Rev. G. F. Hodson, North Petherton, near Bridgewater.

BRAHMA POOTRAS.—Prize, G. Botham, Wexham Court, near Slough, Bucks.

GAME.—First, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott. Second, J. Crane, jun., Tolpuddle, near Dorchester, Dorset. Third, T. Pain, Laverstock Hall, Salisbury. Fourth, T. P. Mew, West Cowes, near Southampton.

GAME COCKS (of any age).—Prize, G. C. Adkins, West House, Edgbaston, near Birmingham.

HAMBURGHES (Golden - pencilled).—First, Rev. T. L. Fellowes, Beighton Rectory, Acle, Norfolk. Second, J. Lowe, Whitmore House, near Birmingham.

HAMBURGHES (Silver-pencilled).—First, G. Botham, Wexham Court, Slough, Bucks. Second, T. P. Mew, West Cowes, near Southampton.

HAMBURGHES (Golden-spangled).—First, W. A. Elston, Bugbrooke, near Weedon, Northampton. Second, G. C. Adkins, West House, Edgbaston, near Birmingham.

HAMBURGHES (Silver-spangled).—First, Rev. T. L. Fellowes, Beighton Rectory, Acle, Norfolk. Second, J. K. Bartrum, Richmond Hill, Bath.

MALAYS.—Prize, C. Ballance, 5, Mount Terrace, Taunton.

POLANDS (Golden).—Prize, J. J. Fox, St. John Street, Devizes, Wilts. Second, no competition.

POLANDS (Silver).—First, J. J. Fox, St. John Street, Devizes, Wilts. Second, G. C. Adkins, West House, Edgbaston, near Birmingham.

POLANDS (of any other variety).—First, G. Ray, Ivy Cottage, Minestead, near Lyndhurst, Hants. Second, G. C. Adkins, West House, Edgbaston, near Birmingham.

TURKEYS.—First, Rev. T. L. Fellowes, Beighton Rectory, Acle, Norfolk. Second, H. Fookes, Whitechurch, Blandford, Dorset. (Class commended generally.)

GESE.—First and Second, J. K. Fowler, Prebendal Farm, Aylesbury. Third, H. Fookes, Whitechurch, Blandford, Dorset.

DUCKS (Aylesbury).—First, Second, and Third, J. K. Fowler, Prebendal Farm, Aylesbury. (Class commended generally.)

DUCKS (Rouen).—First and Third, J. K. Fowler, Prebendal Farm, Aylesbury. Second, H. Fookes, Whitechurch, near Blandford, Dorset.

DUCKS OF ANY OTHER VARIETY.—First, J. K. Fowler, Prebendal Farm, Aylesbury. Second, Rev. F. B. Pryor, Bennington Rectory, near Stevenage, Herts.

STOCKPORT POULTRY SHOW.

THIS was held on the 9th instant. The Judges were Mr. J. Harrop, of Middleton, and Mr. Peter Eden, of Manchester. Their decisions gave entire satisfaction. Considering the season of the year this department was well sustained, and the lovers of the feathered tribe expressed themselves much satisfied with the specimens exhibited. The successful competitors were as follow:—

BLACK SPANISH.—Silver Cup, Mr. S. H. Hyde, Ashton-under-Lyne. **SPANISH**.—First, Mr. R. Chetham. Second, Mr. Richardson, Timperley.

DORKINGS.—First, Mr. J. Parsons, Audenshaw. Second, Mr. G. Potter, Manchester.

COCHIN-CHINAS.—First, Mr. W. Kershaw, Manchester. Second, Mr. N. Marlow, Denton.

GAME.—First, Mr. Kershaw. Second, Mr. S. H. Cheetham.

GAME (White).—Prize, Mr. W. Hague, Audenshaw.

HAMBURGHES (Golden - pencilled).—First, Mr. J. Andrew, Ashton-under-Lyne. Second, Mr. J. Ashcroft, Ashton.

HAMBURGHES (Silver-pencilled).—First and Second, Mr. Z. Tetlow, Failsworth.

HAMBURGHES (Golden-spangled).—First and Second, Mr. J. Andrew, Ashton-under-Lyne.

HAMBURGHES (Silver-spangled).—First, Mr. Z. Tetlow, Failsworth. Second, Mr. J. Ashcroft.

POLANDS.—First, Mr. J. Lawton, Stalybridge. Second, Mr. E. H. Haslewood.

BANTAMS.—First, Mr. J. Hampson, Withington. Second, Mr. N. Marlow, Denton.

BANTAMS (White).—First and Second, Mr. J. Hague, Haughton Green.

ANY OTHER BREED OR CROSS-BREED.—First, Mr. J. Andrew, Ashton-under-Lyne. Second, Mr. Z. Tetlow.

GESE.—First, Mr. W. Kershaw, Manchester. Second, Mr. C. R. Brady.

DUCKS (White Aylesbury).—First, Mr. G. Potter, Manchester. Second, Mr. J. Stocks.

DUCKS (Rouen).—First, Mr. J. Hart. Second, Mr. M. L. Tait.

ANY OTHER KIND.—First, Mr. Robinson. Second, Mr. S. H. Cheetham.

PRESCOT POULTRY SHOW.

THE report given by your correspondent "W." in your paper of July 14th, of the Prescott Show, where he says,

"Capt. Hornby at last achieved a victory over Mr. Wright's long victorious pens," can hardly be correct; at any rate, I cannot reconcile it with an advertisement which has appeared for many weeks past in your columns, that "Captain Hornby has purchased the whole of Mr. Wright's stock of Dorkings and Bantams."

I am quite sure that Captain Hornby is the last man in the world who would like to be complimented for a victory obtained by purchase, and not by competition, and it is not justice to Mr. Wright to describe him as being defeated when he has disposed of his stock; and it is only right that your readers should know that promotion in the poultry ranks by purchase should not be represented as a victory achieved by competition.—W. X. W.

SKINNUM CARRIERS.—FOOD FOR PIGEONS.

Will you tell me the characteristics and value of the Skinnum Carriers, and whether they are good breeders, as I have a pair of *old* ones, aged about two years, but they have taken possession of a fowl's nest, and are sitting on an egg without laying? Could you likewise tell me the proper food for Spanish Runts, as mine do not get fat, though I give them as much barley as they like to eat, and plenty of room? And what difference will it make (if any) in pairing a young bird with one of its parents?—S. T.

[The Skinnum is one of the lowest in the scale of fancy Pigeons. They are generally good breeders. Their only value is sharp flying. They are bred from a mixture of Tumbler and Dragoon or Dovehouse Pigeons. Barley is not considered a good food for Pigeons confined; give them old tares and the smallest beans you can procure. A change of maize or Indian corn may help to fatten the Runts. If the Pigeons are Tumblers, Jacobins, or Turbits, a young bird paired with its parent will reduce the size, which in these breeds is considered a beauty; but in most breeds such diminutive and delicate specimens are not admired, and in-and-in breeding is not to be recommended. We should suspect your Skinnum hen is barren. Barren birds will sit and hatch if eggs are given to them. A fresh hen had better be procured—10*d.* or 1*s.* will get one in London. Barren birds are convenient as nurses, as they will take eggs and rear them at any time.—B. P. B.]

CLASS 7.—FRILLED PIGEONS.

VARIETY 1.—THE JACOBIN (*Columba Cypria cucullata*).

French.

German.

PIGEON NONNAIN CAPUCIN. ZOPF-ODER PERUCKEN TAUBE.



ULYSSES ALDROVANDUS, 1600, in his second volume of "Ornithology," published at Bologna, says of the *Columba Cypria cucullata*, "There are two kinds, one hooded, the

other smooth-headed; some have naked and others feathered feet; the hoods very erect and large." His plate represents a neat Jacobin Pigeon, with short beak, large hood, small chain, and heavily-feathered feet, which plate is smaller in comparison with his others of Pigeons: a number of turned-crowned nondescripts also follow as Cypriæ.

Mr. Moore, 1735, says, "The Jack is, if true bred, the smallest of all Pigeons—the smaller the better." He also notices two varieties. "Some are feathered-legged and footed, others are not; and both sorts are equally esteemed according to the various inclinations of the different fanciers."

The English and French names are derived from this Pigeon's having a clean white head, enveloped, as it were, in a hood of dark feathers, resembling the shaven crown of a monk partially covered with a cowl. The German name signifies having a wig.

The true aristocratic Jack of the old fanciers is not now to be met with in England, if, indeed, it may still be found on the Continent.

The pure and high-bred Jacobin bears the same relation to the Pigeon now called a Jacobin as the fancy Short-faced Tumbler does to its coarser-flying cousin. Their points are as follow: a short beak, the feathers at the back of the head reversed, and erected so as to form a close, compact hood, which arrangement of the plumage is continued down the sides of the neck as low as the bend of the wings, forming what is designated the chain, at the ends of which the feathers spread all round, exposing a spot of white down: the longer this chain is, and the closer and more compact the feathers lie, the more they are esteemed. The eye in all varieties must be a clear pearl colour. They are very neat Pigeons—the smaller the better: the body slightly elongated.

The marking or colouring is that designated piebald or baldhead; that is to say, having the body either red or black (for those are the chief colours), they must have a clean white head, tail, rump, and thighs, with from seven to ten white feathers at the extremity of each wing. Yellow Baldhead Jacobins are not uncommon, nor are quite white. I have seen both Blue and Dun Baldhead Jacks, and some are mottled on the shoulders, which I believe are not generally so much admired. In Germany quite black are also occasionally to be had, and there, too, I have seen some with feathered feet.

The Ruff may be considered as a sub-variety of this breed; they are larger, coarser, and less compact and neat in hood and chain than the Jacobin; the feathers of the hood and chain are longer, looser, and more irregular, appearing rough and disordered: hence the name; in other respects it resembles an inferior Jacobin.

The Capuchin is also a sub-variety or mongrel of the Jacobin; it is simply a poor Jack without a chain. Both the sub-varieties are now not cultivated; nevertheless Jacobins are not nearly so good as they might be if more pains were taken in breeding them to a high standard.—B. P. BRENT.

OUR LETTER BOX.

POULTRY SHOWS (*Rev. F. T.*).—We send special reporters to all the chief Poultry Shows, but have to trust to friends for notes and early prize-lists of others. We specially requested the Secretary of the Leamington Show to forward us one; but we suppose that in the hurry of business he forgot our request. Any one sending us an early prize-list, with or without notes on the Show, confers a favour upon us.

INCUBATOR (*A Subscriber*).—Our statement that an incubator is an unprofitable machine is founded upon the information that several private individuals bought them and gave them up. We have no knowledge of its being employed to hatch spring chickens for the London and Liverpool markets. It is a good hatcher; but then the failure begins—the chickens cannot be reared. If any one can give us information relative to the incubator's profitable employment we shall be very much obliged. We have no prejudice against the machine.

HATCHING GUINEA FOWLS' EGGS (*J. Driver*).—May is the best month for placing them under a hen. It is useless to do so now. Your utmost care would not succeed in rearing the chicks. You will find fuller particulars in our manual, "The Poultry Book for the Many."

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—July 28, 1857.

WEEKLY CALENDAR.

D M	D W	AUGUST 4—10, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
4	TU	Chironia pulchella.	30.181—30.117	87—44	E.	—	30 a. 4	42 a. 7	2 7	14	5 48	216
5	W	Oraches (Atriplex).	30.216—30.190	84—44	N.E.	—	31	40	rises.	☺	5 43	217
6	TH	PRINCE ALFRED BORN, 1844.	30.171—30.046	78—41	E.	—	33	38	8 a. 21	16	5 36	218
7	F	Marsh Gentian (Swertia).	30.009—29.874	88—42	S.W.	—	35	37	8 35	17	5 29	219
8	S	Gentians (Gentiana).	29.718—29.640	80—54	S.W.	08	36	35	8 47	18	5 22	220
9	SUN	9 SUNDAY AFTER TRINITY.	29.808—29.750	75—55	S.W.	10	38	33	8 58	19	5 14	221
10	M	Burnet Saxifrages.	29.841—29.774	84—54	S.E.	—	39	31	9 11	20	5 5	222

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 74.4°, and 51.7°, respectively. The greatest heat, 93°, occurred on the 10th, in 1842; and the lowest cold, 36°, on the 6th, in 1833. During the period 111 days were fine, and on 85 rain fell.

A FEW GLEANINGS FROM BASING PARK.

THIS beautiful country residence of Joseph Martineau, Esq., is situated about eight miles from Alton, which now forms the termination of a branch line from Guildford on the London and South Western Railway, the train whirling the traveller within a short distance of Aldershott, and amid the rich scenery, the fertile lands, and the flourishing Hop grounds of Farnham. As Basing Park owes it notoriety in the gardening world to the remodellings and improvements gradually accomplished by Mr. Duncan, one of my oldest friends, I will not, partly on that account, and partly on account of the space it would occupy, attempt anything like a description, but will confine my recollections to a few points likely to be generally interesting.

APPROACHES.—At the gate which admits the visitor from the Alton road a beautiful lodge is situated, harmonising with the style and character of the mansion. These gates, as they always ought to do, but in such an exceptional case as that at Wrotham Park, alluded to the other week, are placed at right angles with the highway. The approach within is distinguished by the ease and gracefulness of its curves, and is as trim and neat as most walks in a pleasure ground; just rounded in the slightest degree in the middle, and the gravel at the sides within half an inch of the grass verge. On the other side of the demesne, joining, I believe, the Winchester road, a new approach has been formed, the lodge being of a less pretending character. This approach mounts a steep ascent, but the steepness is greatly lessened by the graceful curvatures and line-of-beauty windings with which the artist has taken the road up the hill. This new approach will, in time, be one of the most striking features of Basing Park. Along its side a double avenue is formed of strong Deodars and Araucarias, the latter being next the approach, and standing about forty feet apart, the Deodars not being opposite to, but in the centre between each two Araucarias, and at a similar distance from each other. Each tree is protected by a round wattled fence, which has kept the plants from all injury. Such an avenue would be interesting in any circumstances, but I believe that a diversity of light and shade will be found, some years hence, from the windings of the approach, that no straight avenue could command, even with such materials as Araucarias and Deodars. In producing effect and ornament it may be well worthy of inquiry whether certain forms of vegetation that are extremely interesting when looked at in a curved, ever-varying line, do not become monotonous and insipid when looked at along a straight one. As an instance of illustration from the flower garden, take the finely-cut, silvery white foliage of the *Cineraria maritima* when used as an edging, and mark the difference when that edging is in a straight and a curved line.

EVERGREEN GARDENS.—There did not seem to be any extra extent of mown lawn here—a matter of great

moment in laying out new places, as every yard of that lawn is just so far a sacrifice of utility to ornament, and an ornament the most expensive of all about a garden, because to keep it as an ornament it requires a similar amount of unappreciable labour every week in the summer months. One reason urged in behalf of extensive lawns, even by those who do not aspire to their ever-so-many acres of green turf without a shrub or tree to relieve the eye, is, that otherwise they could have no chance of congregating around them those beautiful forms of evergreen vegetation that by their diversity lend such a charm to the ornamental grounds. Mr. Duncan has hit upon a happy mode of securing that ever-growing interest without any great sacrifice of utility or economy. In the thinnish part of a wood separating the different gardens from each other he has planted various evergreens, such as the best Rhododendrons, Pinuses, Cypresses, Junipers, Thujas, Biotias, Taxodiums, Cryptomerias, Deodars, Araucarias, &c., so that each will have ample space to grow and develope its respective beauties. Access is easily obtained to any specimen, the grounds being traversed by narrowish winding walks, which cross each other frequently at right angles. An additional interest is given to these points of juncture by a circle being formed there considerably elevated in the centre, and having planted there one of the more esteemed or rarer kinds, such as *Cupressus funebris*, *Wellingtonia*, *Fitzroya Saxe Gothea*, &c. These circles not only produce variety, but do away with the sharp corners of two walks crossing each other. The ground between the specimens is chiefly covered with low-growing evergreens, such as *Berberis aquifolia*, &c., which will not only save scythe work, but prove an excellent cover for pheasants and other winged game. In this same wood are some fine deep ravines and dells, in which Ferns and rock plants would find a suitable home.

RENDERING LOOSE-GROWING EVERGREENS COMPACT.—I was struck, not so much here as in the different flower gardens, with the compactness and symmetry of many plants that generally grow rather loose and straggling, such as the *Taxodium sempervirens* and *Cryptomeria Japonica*. This is effected by pinching off the ends of the young shoots, and so effectual has been the result that almost every specimen had a close, trim appearance, and yet not so much so as to conjure up any idea of a cutting or shearing process. Junipers, Cypresses, &c., had been so treated, and yet beyond their compact outline they contained no trace of the artist's work. A stranger, not knowing anything of the process, would give all the credit to some peculiarity in the soil, position, &c.

DIVERSITY IN STYLE.—Near the mansion and conservatory are three small flower gardens, each different in style, and yet arranged on one distinct principle, and that different from that which is now generally in fashion. For instance, in one garden the clumps are separated from the gravel by narrow green verges of grass about one inch in width, which look very neat,

and are quickly trimmed by holding the shears in a slanting position. The one principle of action in all these gardens, however, has been not so much a great blaze of level colour in summer as an interest and an elegance every day of the year. The flower-beds are laid out in groups, but not large, and are blended and surrounded with such plants as noble Araucarias, beautiful Schubertias, elegant Cypresses, and massive Rhododendrons. The blaze of mere colour in the beds can hardly ever dazzle and pain the eye, from the many-tinted green shrubs in their vicinity; whilst these shrubs again reflect back the beauties of the flower-beds, a matter to which I have frequently alluded. The different heights of the shrubs, as also of the plants in the flower-beds, give a light, airy appearance to the whole, in unison with a great variety of tints and lights and shades. This effect is also added to by the mode of planting the beds in groups. Most of these are of one or two colours, after the mode usually adopted, but some are filled with a mixture of showy herbaceous plants of different heights and colours. Though practising the grouping system largely, it is well known that I am not insensible to its defects. The somewhat level, carpet-like appearance of the beds is one of these. The want of a various-tinted green background is frequently another. The monotonous sameness, from the level uniformity and want of light and shade, even though the beds have great variety as contrasted with each other, is another defect. Hence large standard and pyramidal plants, contrasting with the colour of the bed, have been recommended for relieving the level monotony. Hence evergreens have been commended as stand-points and backgrounds. Hence vases and statuary have been spoken of as reliefs to the sameness produced by a level variety. But, as here at Basing Park, such artistic ornaments, and such more natural decorations in the way of fine shrubs, must stand out free, distinct, and unencumbered, from their base to their summits. Then the flower-bed and the shrub and vase will lend and receive additional attraction from each other. Surround a pedestal or a Deodar with a belt of flowers, and you mix and mingle to the confusion of the ideas of order and fitness. Place such objects apart, distinct, and yet sufficiently near each other to combine, and, whilst each is beautiful contemplated separately, they unitedly form an harmonious unity. Sorry should I be to witness the wreck of the gorgeousness of the bedding system. It will have a better chance to live if combined with fine evergreen specimens, and if the groups themselves are not over large. The outline of the small beds would, even if unfilled in winter, present an artistic appearance in contrast with the green shrubs. They would be more interesting still filled with early bulbs, Primroses, and Polyanthus, as is done, I understand, at Basing Park. I have, at various times, somewhat timidly given utterance to such opinions; but I should have had less shrinking in moderating the overflowings of a popular current had I visited Basing Park earlier, or seen the unique, beautiful grounds of the venerable Dean of Winchester at Bishopstoke, which are arranged upon a somewhat similar principle, the chief difference being that, at Basing Park, the flower-beds are arranged in groups, whilst, with one or two exceptions, this has not been deemed necessary at Bishopstoke.

ORCHARD HOUSE.—At this place there is one of the largest and most successful orchard houses that has come to my knowledge. It would simplify matters much were the term *orchard house* confined entirely to those houses protected by glass, and without any means of artificial heat. When that is given it becomes a forcing and ripening house, which was not the primary idea of the orchard house. All new ideas are sure to be run to extremes. Hence glass has been used to inclose a few feet that

would have been more serviceably employed in inclosing a double quantity of yards. With all the onslaughts made upon it, there is much of the economical implied in the old lean-to house. Conceive a good old-fashioned vinery or Peach house, and Mr. Duncan's famed orchard house stands before you. So far as I recollect it is something like 300 feet in length, 15 feet in width, 12 feet high at back, and from 2 to 3 feet in front. The sloping roof, I believe, is fixed; the front sashes open to their full extent if desired; there are large open ventilators at the top of the back wall; and what, perhaps, is more particularly worthy of notice, there are likewise large openings at the base of the wall, secured by wire grating to prevent the ingress of vermin. Mr. Duncan lays the greatest stress upon a thorough circulation of air through the whole house, and thinks that without these openings at the base of the wall a portion of the atmosphere would become stagnant and stationary there. He attributes the burning and spotting of leaves near the base of the north wall of a house chiefly to this cause, and very probably with great force of reasoning, though, in cases that have come under my observation, the mischief was abated when some obnoxious scored and spotted glass was sized or painted over. Be this as it may, there can be no question of the importance of a complete circulation of air under such circumstances. I recollect Mr. Duncan telling us, some time ago, that this house receives no protection whatever, even in the severest weather, except a net drawn across the open back ventilators. The simple old vinery-like construction of the house, with these exceptions as to air giving, may be considered the first distinctive feature of this orchard house.

The second feature is that the trees are *trained to the back wall and to a trellis in front*, the back of the trellis being from three to four feet in height, thus receiving itself full, unobstructed sunlight, and not to any extent shading even the base of the north wall. Mr. Duncan has found that no other plan of training or standarding can give the plants or fruit an equal and sufficient amount of sunlight. This is so far corroborative of what has been advanced of late on growing standards in forcing houses.

A third feature is that the great proportion of the trees are of the stone-fruit kinds—Apricots, Peaches, Plums, &c.—and are planted out in stiffish fresh loam, that seemed little burdened with manure of any kind. Owing to this and a judicious stopping the foliage had a fine healthy appearance, the wood was short-jointed, loaded with fruit-buds for next year, and with plenty of fruit swelling for the autumn. Mr. Duncan gets fine dishes of *Coe's Golden Drop* Plum in December, and from my own observation I have no doubt that, if deemed desirable, fine Peaches and Nectarines may be obtained in such an airy house after those on the open walls have been disposed of. In the same house fine crops of the tenderer Apples and Pears have been ripened in perfection, and so have Guavas, Figs, Grapes, Strawberries, &c.

When some of our friends tell us they hope to succeed with Peaches on a back wall, with Grapes up the rafters from four to six feet apart, and with Apricots, Peaches, and Figs in pots in the centre of the house, we really do not like to throw cold water entirely over their aspirations, though we cannot avoid being candid enough to say that, in such a case, they must always make up their minds to sacrifice one thing a little for the welfare of the rest. Now, I presume the *great golden rule* in all such cases (applicable alike to orchard houses and forcing houses), when you want to grow different kinds of fruit, is, *just to make your house into as many separate divisions, and grow one kind only in each division*; then even air giving will enable you to regulate the temperature and atmospheric moisture so as to suit the residents of each division.

Take a case in point. Mr. Duncan planted a great many Vines in this orchard house, and they succeeded most admirably; but he saw the necessity of removing the whole of them, chiefly, I suppose, for three reasons. They required treatment different from the other plants; they shaded injuriously the fruiting plants beneath them; and, though the fruit was fine, it would have required immediate consumption, as it would not keep any time in such a wide house without the drying effects of fire heat. Apply the same rule to Figs, Cherries, &c.

If there had been no late vineries at Basing Park I have no doubt I should have found a large portion of the orchard house devoted to Vines exclusively, and some simple mode for drying the air in them in late autumn; but this was quite unnecessary, as there are vineries treated much, as respects the Vines, like an orchard house, that ripen their fruit with little or no assistance from fire heat, and only receive that help in the winter months for preserving the fruit from damping.

LATE VINERIES USED AS FORCING HOUSES.—The fruit trees, chiefly of the stone kind, in pots, which I observed out of doors perfecting their wood after having ripened their crop, showed that both early and late vineries had been used in bringing them forward. Late vineries can easily be turned into a forcing house for this purpose by removing the Vines out of the house until their buds are breaking freely. I forget by what particular mode Mr. Duncan accomplishes this; but one of the best I have seen practised is to have at such times double upright front sashes, and the Vines placed between them until you want to introduce them into the house. They would be safe there; you could give them air as you liked, and introduce them after they had broken their buds naturally. It is said we have thrown cold water on growing Vines in pots. Well, we see no economy if you only thus obtain one crop in the year. By the above mode, where glass is scarce and fuel and labour abundant, you may ripen Grapes and other things in pots before you introduce the established Vines. Mr. Duncan, I believe, grows a great quantity of Strawberries in such late houses. In one of the back sheds I found a number of strong right-angled triangles made of large poles, the sloping hypotenuse line being filled with brackets for the reception of shelves. Carry such triangles into the house, lay boards on the brackets, and you have a stage for Strawberries at once. They are just as easily removed when not needed.

Having exceeded my usual limits I will finish these gossipings by two facts.

First, the mode of stopping and summer pruning the Vine was quite in corroboration of a late article on that subject. It required no sage to see that an ample supply of good foliage was deemed necessary to a vigorous reciprocal root action. The Grapes in the first house were dead ripe; the next were swelling freely and showing every sign of colouring beautifully, though the bunches were in general large. I noticed that as the Grapes approached maturity the houses were cleared of all other plants in pots.

NEW GRAPES.—The second fact is, that I noticed a yellow amber-coloured Grape, something similar to what was pointed out to me as the White Hamburgh many years ago when dead ripe, but of which nobody seems to know anything now. Mr. Duncan has no name for it. Besides this yellow one, in a late house he has six varieties of Grapes growing vigorously that as yet have not been proved identical with existing varieties in common cultivation, though submitted to the best authorities. I have noticed some remarks on them in a contemporary periodical. Mr. Duncan obtained cuttings of some from gardens where Grapes are no longer cultivated; of others he is in doubt how they came into his possession. He says all are desirable, but Nos. 1

and 2 especially so. If the quality be in proportion to the huge size of the bunch and the vigour and short-jointedness of the young Vines there can be no question of their desirability. The lovers of novelty in this respect may be on the look out, for no doubt they will be heard of during the season.

If in these random recollections I have fallen into any mistake I shall not regret if the readers should ultimately gain by it, for few could speak so authoritatively on general gardening, and especially on everything connected with orchard houses and growing all kinds of fruit in pots, as our old friend the superintendent at Basing Park.

R. FISH.

EARLY-FORCED FRUITS SINKING TO A REST CONDITION.

MOST of THE COTTAGE GARDENER readers who cultivate in-door fruits must be aware that the Peach, and, indeed, other deciduous fruit trees begin to assume another guise when the fruit is ripe or gathered. The tree gradually loses its verdant character, the older foliage begins to show "the sere and yellow leaf," and very frequently a later growth manifests itself, arguing, of course, considerable powers of absorption still at work, notwithstanding an apparent general decline—a phenomenon of annual occurrence. But, in the midst of all this approaching quietude in the vital forces, a practical observer will see, in the turgid and bronzy foliage of the earlier developments, a desire yet to maintain its ground until some hidden process shall have been carried out. Under such circumstances many persons are puzzled to find Vines, Peaches, &c., reproducing spray at the very period when the trees are evidently approaching a rest condition. I will here offer my opinions concerning this apparent anomaly. In the first place, granted that there is and has been a strong root action, what can become of the ascending fluids after the earlier growths of the tree are supplied otherwise than a renewed attempt at growth? Fresh twigs have started; a demand still exists for the ascending fluid, which an energetic root is ready to meet; and the question arises whether it is proper to encourage such late spray. To remove it entirely would be to force the plant into a rest condition; to leave it at random would be to divert the solar light from the principal foliage, where it is so much needed. Most good gardeners hold with removing such portions of the spray as shade the principal leaves. In order to explain this subject fairly I will just examine the following heads, which would seem to comprise the whole subject:—

Firstly, a forced rest; secondly, a natural rest; thirdly, rest as connected with the encouragement of the red spider or other insect enemies; fourthly, rest as connected with the future spring.

A FORCED REST.—This is accomplished by strictly pruning away all late growths, and by shutting up an unusual amount of solar heat, sometimes over 90°. Its effect is to hurry the tree into a rest condition, and, as a consequence, to place it in a position for a somewhat earlier forcing in the ensuing year. But it is presumed that this is effected at the expense of a little power, and that retaining for a time a portion of the later growths increases the volume of new fibres in the border, as also the fund of alimentary matter in the tree. Nevertheless, it may be readily supposed that in hot climates, where the Vine is indigenous, it hurries on to immediate rest in obedience to the climate, possibly its exit being hastened by a few pelting hail-storms.

I come now to head the second,

A NATURAL REST.—Although I cannot flatter myself

that I have chosen the most applicable term as to what I would explain, I must use it for the present as a provisional title. By this I mean what is generally practised by good gardeners, and what I have before alluded to, viz., a compromise between two extremes, the Vine being, as it were, either scorched and snubbed or encouraged into a state of rest. Our intelligent readers will here perceive that what I would urge is, that although we may not dictate to Nature in her best moods, we may, at any rate, in practice qualify pernicious extremes of a purely accidental character; for whoever thought of imitating a hail-storm or a burning hot sirocco in a hothouse? I therefore conclude that we do well to feed our hard-working Vines and Peaches for awhile after the fruit is gathered.

REST AS CONNECTED WITH INSECTS, &c.—Here we have another important consideration, although of a collateral character. All practical gardeners are aware of the fact that the red spider, scale, &c., are fearfully on the alert as soon as the foliage of the Peach or Vine gets into full play, or is on the decline. This, no doubt, is owing to the character of the sap of the tree, together with the atmospheric conditions as regards heat, &c. The elaborations are, doubtless, at this period at a high pitch, and must form a rich treat to these marauders. Now, the more the plants are hurried to rest the faster these insects pursue their depredations; and herein is another reason for sustaining the trees in a healthful condition until their purposes are fully carried out. Good gardeners, therefore, at this period use the syringe very frequently, and batter well the foliage of both Vines and Peaches.

REST AS CONCERNING THE FUTURE SPRING.—Rest has the power of creating what is generally called excitability in fruit trees, and the more it is prolonged, and the more performed it is within given limits, the greater, in general, will that excitability prove. Still it must here be observed that the ideas of this rest condition were rather extravagant in years gone by. Most gardeners, some forty years since, made a practice of taking Vines out of the front sashes of their houses every winter in order to "harden them," for such was the technical phrase in those times. I have helped to get Vines out under such circumstances forty years since at Melrose Hall, near Wandsworth, then the seat of D. Rucker, Esq., the Vines having stems four to five inches in diameter. I have known about seven men employed to get out one of these old Vines, and it was really absurd to witness the mighty fuss there was over this ceremony, the poor old Vines frequently cracking and splitting at sudden bends. This was the practice of Mr. Kershaw, one of the soundest old English gardeners in his day, and a most respectable man.

Now, although rest of a somewhat decided character is requisite for forced deciduous fruit trees, there is really no necessity for subjecting them to intense frosts. A Vine which has enjoyed for months a temperature ranging from 70° to 90° will find sufficient rest at a temperature ranging from 32° to 45°, or perhaps even more. Of this there can be little doubt, so that those who possess what are called greenhouse vineries need not distress themselves about the freezing of their Vines.

I may now take a brief retrospect of the whole affair, and in doing so I shall endeavour to show to the uninformed what is good practice in these matters. In the first place a distinction must be made between borders inside houses and those outside. Of course, to have the roots saturated with moisture when the trees are gradually sinking to a rest condition is by no means desirable; therefore, if the roots be outside we must make allowance for those dashing rains which sometimes occur in August and September, and water accordingly. But as to inside roots the case is very different; these are generally in a very dry condition

at the period named, and, such being the case, a thorough soaking often becomes necessary. But let us again observe the object in view. The Peaches are gathered, the foliage is just commencing its autumn discoloration, yet, if in good health, still producing young shoots in various parts of the tree, particularly towards the grosser portions of the extremities. What should be done?

In this case a double purpose may be served; the blossom-buds at the base of the earlier foliage may be rendered more plump, and the strength of the tree may be equalised. Suffer them, therefore, to grow a week or two, say nearly three weeks; but as soon as the prouder terminal points have produced three or four eyes let them be pinched, but suffer all the weaker portions of the tree to grow to the very last, at the same time removing all mere breast spray which shades the principal wood. And as to Vines, here we shall find a similar movement. If they are healthy, and the trees have not been overtaxed, we shall have them still producing small spray, with numerous small leaves, which at once show, by their character, their inefficiency as to the production of any amount of elaborated sap; but they may be made subservient to the production of fibres in the border, and we seldom hear gardeners complain of a border too full of roots. I think it well, therefore, to suffer these late growths for awhile at the extremities of the tree, or, indeed, in any portion where their shade will not damage the chief foliage on which the next crop depends, or create inconvenience to the plants or other matters below. But they should not be allowed this liberty long—not above three weeks; they should then be closely pinched, or, indeed, pruned away if the trees are manifestly inclining fast to a state of rest.

R. ERRINGTON.

SETTING OFF AND CROSS-BREEDING.

I HAVE many thanks to offer for kindnesses received, but, as some of the addresses of the benefactors have not been sent in with their contributions to the Experimental Garden, I have resolved on taking a leaf out of the late "transactions" at the Horticultural Society, and thus thank all the contributors up to the end of July in the "lump;" then go on to tell how things are looking at the Experimental; and finish with full and particular accounts of the ways we propagate, or make sure of the different classes of plants which we employ for another year.

The Experimental Garden has just gone through a fair critical examination by one of our "great English gardeners," and without being *dux*, as the head of the class is styled in my native academy at Inverness, the Experimental may reasonably aspire to excel in some of the higher departments of our craft, that is, judging from this first examination.

Sir Edmund Head, the Governor General of Canada, Nova Scotia, and New Brunswick, with Lady Head, paid a visit of state to the Experimental Garden the other day, both of them looking remarkably well after nearly ten years' residence in a much colder winter climate than ours, and the wear and tear inseparable from their high official standing in North America. Now, supposing we had another example from our Australian settlements or New Zealand under precisely similar circumstances, how would the comparison stand in respect to outward appearances? I think the chances are that we should find judgment against public opinion; indeed, I am sure of it, and I could produce physiological reasons in support of the fact. All our public writers err who recommend a warmer climate for a healthy man to live in than was natural to him and his fathers. I allow the fact that the young of all plants and animals do better up to a certain age in a warmer

climate than was natural to the parents, but after the bones and the rest of the "fruit" are ripe a warmer climate will hasten decay much sooner than a colder one. Just look at nine out of ten men returning from Australia after so many years. Are they not lean and lanky, looking as if they had barely escaped the jaundice? and yet, in the face of such plain evidence, men sensible in other things go on recommending emigration to Australia above all places on the score of health, long life, and happiness. But I say, and I hold it to be the truth, that our Canadian possessions are the best place we know of for making a man out of a slim stripling. He may get a pinch now and then it is true, and a blue nose occasionally, perhaps, before he is accustomed to the ways of the natives, but he will never get either lean or lanky if he is not of a stock of that ilk by descent. Hence the reasons why I have always recommended Canada to gardeners and farmers in preference to any other country on the face of the earth, and I am glad that I have got this opportunity of explaining myself, because it has been urged against me that I have been all along swayed by feudal or clanish prejudices.

Lady Head was one of our "great gardeners" before she went to Canada, and has seen little yet here which is much different from what was prevalent ten years since in high places in the disposition of our bedding plants, but she is amazed at the improvements we have effected in the races for the flower garden. The *Geraniums* for the mixed borders surprise her most of all; the Nosegay style of bedders she is delighted with, and for the moment I forgot that I was not discussing their merits with Lady Middleton. Mrs. Vernon will be pleased to hear that her namesake Nosegay Geranium and "that style" seem requisite to set off the glare of the "common scarlets." There is a wonderfully deep meaning in that which ladies call "setting off." Gardeners may dig and dive to the bottom of our craft, but, unless the eye is cultivated to set off whatever passes through their hands, whether it be for the pot or for the eye itself, depend upon it they are behind "the spirit of the age." "But how would you set off a bed of *Tom Thumbs* to begin with?" asks Mrs. Grundy. Fill it brimful, and place it in the centre of anything, and that is the first degree on the scale—the lowest use which can be made of anything which is more telling in colour or in beauty than the rest. A band of variegated plants round a scarlet bed will not improve it, or set it off to more advantage or more disadvantage as long as it forms the centre of a group of beds. The glare of scarlet *will* catch the eye, and keep it there to the prejudice of the other beds; and all the white in the world will not lessen the effect of the scarlet in that position, or help the scarlet to "set off" any one of the other beds, so on that account they gave up here in England, soon after the French revolution of 1848, the damaging effect of placing scarlets in the centre. But a light band round a scarlet bed, or a bed of any strong colour, will set it off still better, besides producing a very essential help in some other cases which often occur, as, when bright purple or any shade of pink has to be placed next to scarlet, if the scarlet be not banded in white it is very apt to drown the pink and purple. Rising higher in the scale, the scarlet bed and the white band are capable of being both set off to better advantage by a recent move, which began about the time they made Louis Napoleon Emperor of the French. Suppose two other beds of Geraniums to be placed near the scarlet bed with the white edging, and these two to be of a different colour, and the plants in them to grow differently from *Tom Thumb*, *Tom* or the scarlet is "set off" to the highest degree by contrast. Nosegays contrast in colour, shape, and style of growth with "common scarlets." Thus they, the scarlets, seem to look better, and their better looks help to "set off" the very beds, the Nose-

gay beds, which are setting off the scarlets at the same time. That is a fair glimpse of what ladies call getting the complement or full effect out of flowers by a proper disposition of their colours and of the styles of growth. Some of the greatest critics maintain that the highest style of beauty is in form, rather than in colour; but, without agreeing with them, that opinion itself shows how essential it is for us to study the form, or style of growth, as well as the colours of the plants we use, in getting at the highest branches of flower gardening; and these were the rules by which we were chiefly examined by Lady Head on the bedding system.

The system of mixed borders, being more open to the "pleasant mood," was more discursively handled on this occasion; the only feature worth mentioning in our favour was the extent of our border Geraniums, which "struck" even Lady Head. To be able to see fifty or sixty kinds of Geraniums perpetual bloomers on a border from frost to frost is indeed worth experimenting for. But how are we to keep them from the frost? is the next question; and the next is, Do you want more than so many of each kind? and, if you do, which is the best way to increase them?

Here, then, I have a new useful rule for many of the best English gardeners. It was suggested by Lady Head, who is going to take back to Canada, next October, a full complement of seeds of all our bedding plants that can be depended upon. After raising as many seedling Geraniums as any one living, I affirm with confidence that every Geranium in England, if it will seed at all, will come as true from seeds as the best authenticated species from the Cape of Good Hope. To say that Geraniums will sport from seeds like Dahlias is only to admit mismanagement on the part of the cross-breeder. If you want to take *Tom Thumb* to New Zealand a packet of your own seeds will answer, provided that you take proper means to exclude all access of foreign pollen to the flowers; and the same with all other kinds. A gardener who can keep a few hundred seedlings in winter—seedlings of Geraniums, Fuchsias, Calceolarias, and Petunias to begin with—need not fear but his seedlings will bloom next summer; and, although they may not be worth a straw in commercial value, they will be as gay as any one can wish in the flower garden or in the conservatory.

There are two ways of crossing conservatory Geraniums, by either of which any man of ordinary industry may keep up the fashion in Geraniums for private use. The fashion is always to have new Geraniums, and I have been in this fashion for some years past, all my Geraniums being quite new. I have a thousand new Geraniums at this moment, some of which nobody has ever seen, and no one shall ever see but myself, if that is any comfort. The first way is to cross the best of the French spotted Geraniums with the gayest-coloured English Pelargoniums. Mr. Appleby's lists of selections will now be useful in determining the kinds. Some of them seed and some do not, and in others their seeding depends on the kind of treatment they receive; therefore to say which should be taken and which left might do as much harm as good. The second way is to cross bedders and borderers, or perpetuals, with the rich and gay colours of both English and French fancy kinds. The pollen from the bedders will not give so many perpetuals as the pollen of Pelargoniums applied to those which are known to be perpetuals. To give a recent instance, the seedling which came out lately under the name of *Crimson King* is now in bloom within a yard of my elbow, and I see it was raised from *Gauntlet*. *Gauntlet*, therefore, must be a very good mother of perpetuals, notwithstanding its bad habit of gawkiness, if a "stocky" growing plant is chosen for the pollen parent, which must have been the case with the father of the *Crimson King*. The bad habit is lost without hurt to

the disposition to flower all the summer and to force for winter. *Dr. André* and *Sanspareil* make grand seedlings, as we have seen in Mr. Gain's plants, exhibited before the last meeting of the Horticultural Society. The *Doctor* and *Madame Lamoricière* would make hybrid Bourbons sure enough. *Scaramouche* should be paired with the *Diadematus*, but all of them are shy to breed. I saw some most beautiful seedlings this year between *James Odier* and some of our own summer Geraniums. *Virgineum* is a treasure for forcers of hybrid perpetuals; but it seeds very sparingly, and will unite with but few kinds. *Blanchefleur* is from it to a certainty. I have seen a splendid self, or all but one uniform rich tint, between *Rising Sun* and one of the oldest and most radical-looking Geraniums in Covent Garden, Bloomsbury, to wit; and, after seeing such a cross by the first breeder of the age, is it likely that I should allow myself to be yoked to a beam, and walk round and round the cider-mill, grinding Barland Pears and Downton Pippins to make champagne for the florists? I would sooner kick the beam right through the roof of the building. The dear little *Countess*, with the pollen of *Virgineum*, has produced with me the exact counterpart of Sheppard's *Queen Victoria*, with a better constitution and a disposition for perpetual blooming, and *Bridal Ring* has moved a step or two in the direction of white edging plants. There is not a single cross seedling in cultivation from the Ivy-leaf Geraniums, all the kinds being natural species and natural sports. I had one once, a pretty little lilac thing; but I gave it away, and I fear I shall never see it again. The true Nosegays are a most difficult race to improve on. Nature makes no leaps or jumps with them most certainly. *Baron Hugel*, which never produces a grain of pollen, is now seeding like a weed in a bed by itself in the Experimental. Who, then, can doubt the influence of humble bees on the art of the cross-breeder?

D. BEATON.

BEE-KEEPING IN FORMER TIMES.

As I find many of your readers take great interest in bees, and some novel contrivances for sheltering these industrious little objects having been from time to time offered to the public, I am induced to describe to you the practice which an eminent bee-keeper in the north of England used to adopt some fifty years or more ago, with, perhaps, as much success as has ever attended that of any of the more fashionable apiarians of more recent times; and as I had, when a boy, every opportunity of witnessing his mode of dealing with them, and frequently assisted in the operations connected with them, I have often thought his plan deserved more attention than it was likely to receive in the rural, or rather, outlandish district he lived in; but as that had much to do with the success of his plan I will at once describe it.

The place my worthy old friend lived at was tolerably sheltered by trees, and the neighbourhood presented the ordinary farming crops common everywhere; but at the distance of about three miles there was an extensive tract of waste land several miles wide, the hilly portions being mostly covered with Heath, and the valleys with the coarsest grasses and bog plants in variety; in fact, it was one of the "moors" so common in the north. Well, my friend's residence being so near this moor gave him a sort of right to depasture his flock thereon, despite what lords of the manor and other functionaries might say in the matter; and though he was told that his bees could easily find out where their food was to be had in the greatest abundance, he considerably thought the journey there and back might be spared these useful workers, and consequently removed

his colony there. The mode was simple; but, before explaining how that was done, I will describe the position they occupied at home.

I have often wondered whether boxes or straw hives have the most claim to antiquity, for my old friend told me his ancestors had used wooden boxes for some two or more generations back, and those he then used differed but little from those he said had been used long before. They were, as near as I can remember, perfect cubes, the inside dimensions of which were eleven inches and a half or a foot, and being made of the best Norway white deal, an inch thick, or nearly so, they did not warp or split with the sun, to which they were fully exposed; for be it remembered the maxim in those days was to place them in the full noonday sun, though they were often placed where they had sunshine only for about eight hours per day even in the longest days. These capacious boxes had each a small pane of glass at the back side, and the entrance hole at the bottom was very small. On the top, which was quite flat, were some holes, usually kept corked up, and on the top of these boxes smaller ones of the same width, but only about six inches deep, were placed, a sort of hasp fastening uniting them together; then, presuming the main box to be full of bees and likely to swarm, the second one, called "the eke," was set on the top of the other, the corks being withdrawn from the latter at the time. Generally bees will not swarm when they have access to such a capacious upper chamber; but this is not always the case, and when a swarm would come off we used to hive them in an ordinary straw hive, and carry them back to the mouth of the parent hive, tumble them out there, and, searching for the queen bee, secure her, when the rest always went home again, and would generally occupy the upper story of the home. Sometimes we have put them into that, and set it in its place again, there being a thin bottom board to it, with holes in it corresponding to those in the top board of the bottom box, for be it remembered there was only one outer door or opening, so that the family occupying the upper compartments of the mansion had all to ascend and descend through the workings of the other bees. The top box having also a little glass at the back of it, their progress was easy to see, and if the season was favourable it was speedily filled with comb, and indicative of swarming again. If this appeared likely it was only necessary to repeat the former practice, and add another eke; but this time the eke was not put at the top nor at the bottom, but in the middle, and the boxes being all made square, and of one size laterally, they fitted together any way; and there being a thin bottom board with the top box that was filled, that, together with the full box, was elevated some quiet evening, and an empty one of similar size, &c., slipped in between the top and bottom one, still confining all ingress and egress by the bottom, and consequently the dwellers in the garret would be obliged to pass through an empty room. If all went on well this was speedily filled, there being less inclination to swarm now than before; but if they did they were put back home again minus their queen, or it might be two or three queens, as the second and after-swarm often have a plurality of these essential rulers. This mode of adding story upon story gave great space to the bees, so that when the bottom and two top ones were filled the weight of the whole was rather ponderous, and they were often served this way if kept at home; but if transported to the moors another course was taken, which it is well here to describe.

Presuming a good swarm came off tolerably early in the season, and that it was hived in one of those square boxes described above, the box being placed near to where the swarm alighted for the day, the bottom board was put on at night, and the hole by which the

bees entered being stopped up very early next morning, say by two o'clock, the box and its contents were removed to the moors to a favourable and somewhat sheltered place. Three stakes driven into the ground to set the box on, a good thick sod placed on the top, and a good large stone on that, was all the attention they got at that time; and let it be here observed that the progress they made for the next month or so was anything but rapid; for though I am not acquainted with any plant that affords so much honey as the common, wild, pink-flowered Heath, which flowers in the latter end of July and August in the north of England, and perhaps no description of plant presents such an effusion of florets all expanded for so long a time, yet the Pine-leaved Heath, *Calluna vulgaris*, with its beautiful rose-coloured, bottle-shaped blooms, which come out much earlier, are nearly useless to the bee by that insect being unable to enter them, and, as wild wastes do not present many flowers early in the summer, the pasturage for bees is very scanty there until the Heath is fairly out; but the object of removing the swarm immediately after swarming was to get them there before they had made much comb. If we were sure they would make as much as would fill the box before the proper time of removing them all very well; but if they only half filled the box it would be almost certain to break down in the process of removal, for, as all bee-keepers know, these tiny little architects lay their foundation at the top, and build downwards. It was, therefore, essential to have them near their future labours at once.

The mode of removing the larger old hives was somewhat different from only taking a single swarm. The single one could be carried by hand; the others were too heavy for that, and the roads in many places impracticable to wheel carriages. The primitive mode of carrying them on something like pack-horses was adopted—a kind of frame or pannier fitting a donkey's back, and so contrived as to hold a box on each side, and sometimes one on the top, completed the load. Generally two were sufficient, and the mouths of the boxes being stopped up, away we started with the cavalcade in such time as to reach our destination by four or five o'clock in the morning, taking care that our charge kept all right by the way; for though swarming bees may be handled with impunity, and at very little danger to the operator, they are not to be trifled with at other times, and the boldest and most skilful managers are often put to the rout when a proper strategy is not put into force. Thus I have known an uneasily travelling donkey occasion a shuffling of the box so as to cause a leakage of its inhabitants, who speedily vented their indignation against the poor carrier, acting upon him like a liberal application of spurs, and the living load was got rid of in that shipwrecked manner which few like to venture near enough to assist without great care. I never but once knew this to happen, and then I was not present; but I do not know any better way of conveying them to their summer quarters. When once there they were simply placed on three or four stakes driven into the ground, and a good thick heathy turf or two laid on the top, the situation being generally near some shepherd's dwelling, who paid a passing attention to them, for they required but little, as we generally placed an empty eke on the top of each heavy one, and the lighter ones were left to fill what space they had got.

Like pork, beef, and mutton, honey varies in quality just as it has been produced, certain foods determining the quality of the one, as well as certain flowers do the other, the common Heath producing a honey which is often more relished than that made from garden flowers, or those met with in an ordinary way in cultivated districts, and if the weather be fine during the time the

Heath is out there is every certainty of abundance of honey. For this reason the outlandish bee-keeper cares very little for bad weather, provided the month of August be fine, as the little industrious workers lay up sufficient that month for all the rest of the year, and it is astonishing the weight of honey they will collect in a short time when the weather is fine. After the Heath is done the common blue Scabious and other wild flowers are often found within easy reach, as they inhabit the boggy places between the ranges of hills, and from these the bees often gather a good deal of honey; but if they have already filled their combs they are careless of searching for more, and cannot do it if the weather be unfavourable. Under these circumstances it is best to take some of them, which, late in the season, cannot well be done any other way than by destroying the bees; but if it be in the middle of the season, and there appears to be plenty of honey in some of the ekes, let the operator secure himself against attack by inclosing his head (with hat on) in a large muslin bag, such as he can see through, but not to let the drapery be in contact with the skin, so as to afford them a chance to sting through, and the hands and other vulnerable places being also secured, the full eke may be taken off and removed, and an empty one put in its place. It is best to carry it some distance away, switching out the bees at the same time with a bough; but let not the unprotected venture near them at such a time, or they will suffer for their temerity. This is often done before taking them to the moors if the season has been favourable and they have made much honey, as it all depends on that.

Although there may be nothing absolutely novel in the above, and every one is not near enough to benefit by ten thousand acres of moor land, still the box system of keeping bees in is almost as old as the hills; and certainly I have never known so much honey in a straw hive as I have seen in a box, for the simple reason that straw hives are seldom or never so large. I think upwards of 150 lbs. of strained honey have been taken out of one of these boxes, and I daresay they might have been increased in size to much more than that, but we seldom cared for weighing it at the time, and my memory may be at fault in the weight; but the process, as detailed above, I have often assisted at, and, when a boy, was fond of it. Since then, however, I have been less amongst them, and would not have troubled you now with this communication, only as bee-keeping has assumed a fashionable character, I am induced to record the way it was done in times long since gone by. I daresay in many of the northern counties and in Scotland the same process may be adopted still; but as all bee-keepers are not readers of your useful serial, much less willing writers to it, I have herewith made it the subject of my present week's communication to you.

J. ROBSON.

GOLDEN STONECROP.

(*Sedum acre*, var. *aureum*.)

WE received this in good condition at last from a friend in Yorkshire (T. S.), who says, "I received it from Berlin under the name *Sedum arcticum*. The points of each shoot turn yellowish white in the autumn, and remain so till spring, making it a very ornamental plant during the winter, and very useful for putting into jars, vases, or glasses about the rooms, where few plants could be trusted in severe weather. I send you also *Genista cinerea*, one of the best hardy shrubs I know." This looks like *Cytisus argenteus*, a silvery kind of Broom.

"*Tulipa sylvestris* grows on the banks of the Don in patches not much less than half an acre. It produces but few flowers, however; the roots are so closely packed together as to prevent their flowering except at the edges of the beds. About half a mile from the Tulips grow abundantly the rare

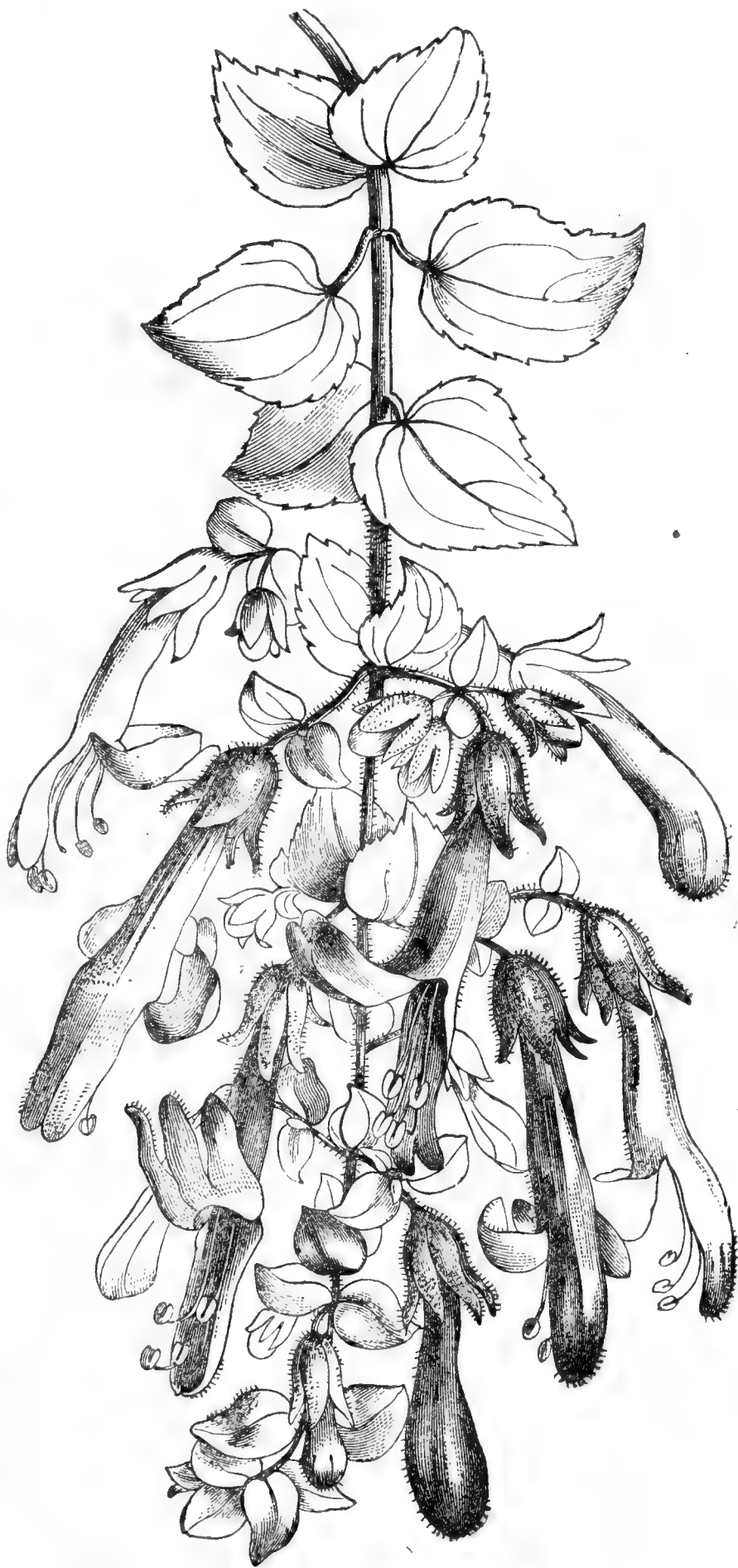
Ornithogalum luteum, *Cypripedium calceolus*, and several Crocuses. *Adiantum capillus Veneris* is found growing on rocks near Durham: it is in a very dwarf state."

The finest Maiden-hair Fern we have seen grows in very damp and very much shaded places, in the crevices of rocks within the influence of the spray of waterfalls, in the Highlands, where one could gather loads of it.

"*Linum grandiflorum* is particularly fine with me, and seeds freely; but recollect it is very treacherous in that respect. Unless you 'set' the blooms with their own pollen you cry chicks before the eggs are hatched."

PENTSTEMON CORDIFOLIUS.

RAISED from seeds brought home by Mr. Hartweg in June, 1848, and said to be a shrub four feet high, from the mountains of Santa Ines, in California.



A downy-stemmed half-shrubby plant, with a trailing or spreading habit, so that it is well suited to hang down over stones or rocks. Leaves dark green, shining, cordate, serrate, slightly downy. Flowers in one-sided, narrow, leafy panicles, which sometimes measure more than a foot in length. The branches of the panicle are hairy, and bear

each from three to five flowers when the plants are vigorous. Calyx covered with glandular hairs; corolla not quite an inch and a half long, rich dull red; the tube almost cylindrical; the upper lip straight, nearly flat, slightly two-lobed; the lower three parted, spreading at right angles to the upper.

It has so little the appearance of a Pentstemon that it may be expected to be regarded hereafter as a distinct genus.

A hardy little shrub, growing freely in any good rich garden soil, and easily increased by seeds or cuttings in the usual way. It flowers freely, one year from seeds, and lasts in flower from June to October.

It is a very desirable hardy plant.—(*Horticultural Society's Journal*.)

TROPÆOLUM SMITHII.

FROM Messrs. Veitch and Son, whose collector, Mr. William Lobb, sent it from Peru.



A climbing annual, with smooth dark green five-lobed leaves, glaucous on the under side. The flowers grow singly from the axils of the leaves on very long stalks, are bright orange red, with the petals divided at the edge into bristle-pointed teeth.

It is a very pretty species, which deserves to be more generally cultivated than it is.—(*Horticultural Society's Journal*.)

NOTES FROM THE CONTINENT.—No. 7.

BERLIN.

As the subject of spring-flowering plants to be used as bedders has been brought conspicuously before the readers of these pages, I deemed it my duty to look round, and see if I could not add my mite to the general treasury of knowledge on this point. I find that in the best gardens in this neighbourhood it is customary to fill the beds of the flower garden twice. The best plants I have seen used for the first planting are as follows: *Silene pendula*, one mass of flowers of a rosy crimson colour, growing not more than four inches high on our soil; it is raised from seed every autumn, and

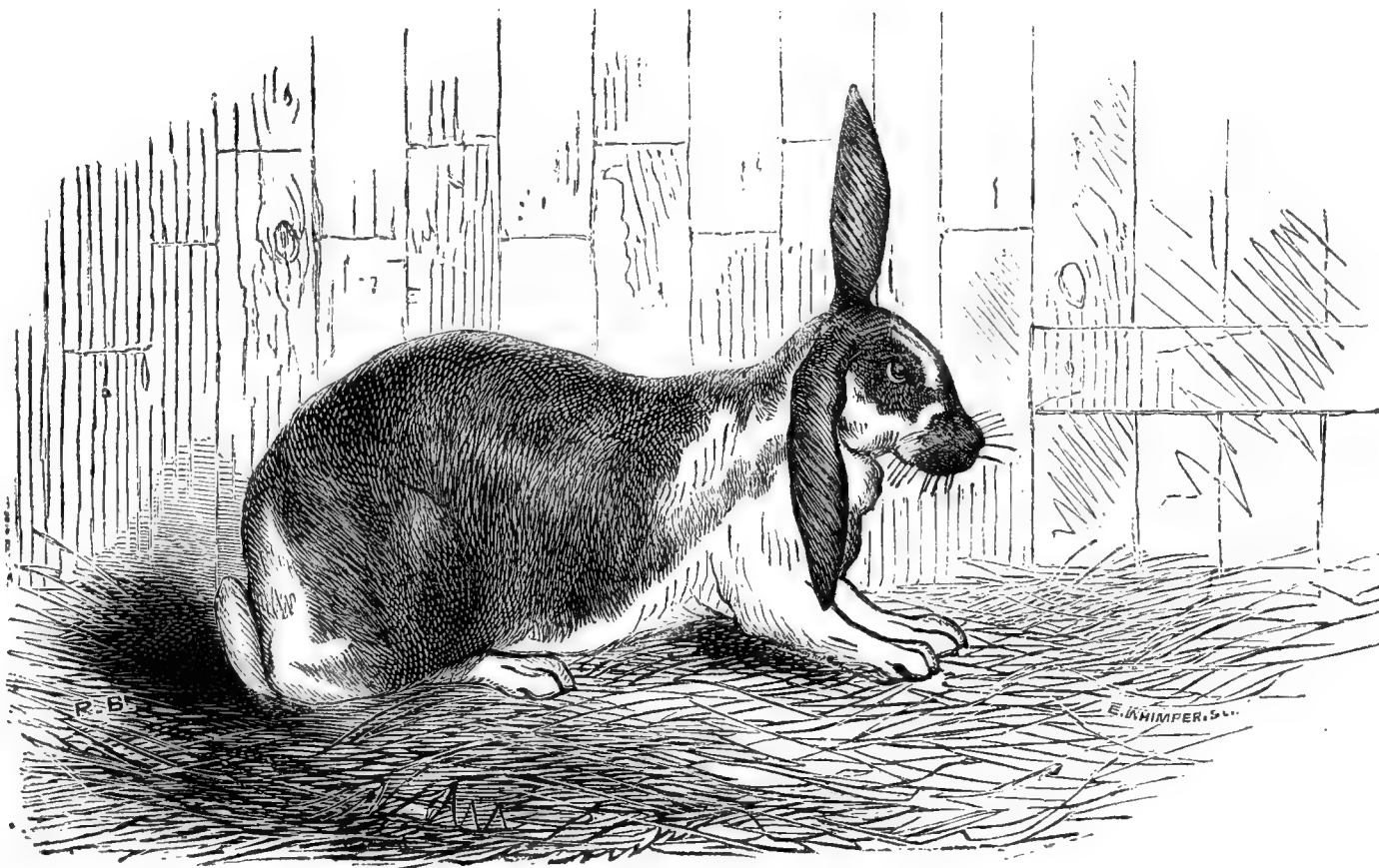
kept during winter in a cold pit. *Phlox repens*, or, as it is called in the Botanic Garden, *P. verna*, not quite so good a colour as the last, nor does it remain quite so long in bloom, but this may be owing to our dry climate. It may do better in England; at any rate it is worth the trial, for it will, under the worst circumstances, make a gay bed for a month or five weeks. *Myosotis alpestris*, pale blue, flowers profusely, and lasts a long time; it grows from nine inches to a foot high; raised from seed every year in the open ground. *Alyssum saxatile*, bright, clear yellow, a foot high; makes a very distinct and good bed. *Nemophila insignis*, raised from seed in the autumn, and kept in a cool house. *Iberis sempervirens*, struck from cuttings every year, makes a good white bed, but has a purple tinge as it is going out of flower, which causes it to look "smudgy." These are plants which I have seen very useful for the two months previous to the planting of the summer bedders. Then we have, as less useful plants, many sorts of bulbs; the purplish *Aubrietia deltoidea*; the yellow *Doronicum Austriacum*; the deep purplish blue *Gentiana acaulis* as an edging for beds of Rhododendrons; and other plants well known and commonly used in England.

Westward from Berlin lies a piece of ground of great extent, but whose beauty is in no way commensurate with its size. It is known as the "Thier Garten"—a name which implies that it is a park for deer or other animals, though there are none there. It is true the Zoological Garden is situated in it, but the name was in use long before the establishment of the garden. Some travellers have described this park as being little better than a huge coppice, but that is too severe an epithet to apply. There are parts which, though they cannot be called either grand or very beautiful, yet at least deserve the title pretty. There are in it many

long, straight roads and drives, with narrower avenues on each side for pedestrians, with seats set up at convenient distances. The most important of these roads is that leading from the Brandenburg gate of Berlin to the Palace of Charlottenburg. For nearly three English miles it is quite straight and perfectly level. Then there are vistas leading up to statues or groups of figures; here and there we come upon glimpses of water scenery, with rustic bridges and willow-covered islands. There are also flower gardens in one or two places; the best is that around the foot of a statue erected to the late king. A hedge of *Cydonia Japonica*, three feet high and two feet thick, surrounds this garden, and in April was one mass of scarlet flowers. Festoons of Virginian Creepers are in some places carried from tree to tree with good effect. The great desiderata of the Thier Garten are more open spaces and a more diversified surface—it is too dead a level; but open lawns require such an amount of labour to keep them in good order, or even to keep them green at all, that we cannot expect to see it carried out upon such a scale; we must here be satisfied if we can get shady walks and pleasant drives. The only good lawns I have seen here owe their greenness to a continual supply of water; those which have not been so treated are completely dried up.

Within the last few days we have had some heavy thunder showers, which will soon produce a good effect upon all crops, as well of the field as of the garden. We had at Berlin a few cool days about the middle of the month, with a few good showers, and on the night of the 14th of June there was sufficient frost to kill the young tops of the Potatoes in exposed situations. It is now as hot as ever again. —KARL.

FANCY RABBITS. THE HALF-LOP.



THIS, the last sub-variety of the Lop-eared Rabbit, is, like the other varieties of this breed, named more after the carriage of its ears than the peculiarity or purity of its strain. The Half-lopped variety may be separated into two classes, and with some benefit, at least to the young fancier, inasmuch as one variety almost invariably bespeaks impurity of blood, although I have known exceptions to this rule; while in the other variety we may find numbers of the highest-bred animals descended from parents of the most unimpeachable beauty both in the carriage, length, and breadth of the ear. It is, in fact, very difficult to breed a litter of young Rabbits from the most perfect specimens

without one or two of them being of the last-mentioned variety of the Half-lop, at any rate for a considerable time, or until the offending ear be brought to its more proper position by drawing it through the hand for some time each day. In the first class the Rabbit holds one ear directly upwards like the common Rabbit, while in the other both fall over on one side. In the former case the ear will generally be found deficient in length, while in the latter they will often turn out the longest eared and best lopped in the litter. Like all other varieties of the Lop-eared Rabbit, they may be found of all colours, marked as well as self-coloured, *i.e.*, of one uniform shade.—PERCY BOULTON.

A VISIT TO THE CRYSTAL PALACE.

It never occurred to me, when visiting the Crystal Palace last week, to make notes for the use of *THE COTTAGE GARDENER*, but since my return home one or two facts remain prominent in my memory.

On landing from the railway and walking leisurely up the long covered corridor I was struck with the well-trained and healthy appearance of the climbers, but disappointed at seeing so few in bloom; indeed, with the exception of *Eccremocarpuses*, *Clematises*, *Solanums*, *Passifloras*, and *Geraniums* in the intervening spaces, there was not much to study or arrest the attention. It is greatly in favour of the visitor having to meet them in advancing order, whereas, on descending the inclined plane, they appear to retire from him; but the good English custom of keeping to the right of those you meet places a line of population between you and the plants which is unfavourable to a close examination. The row of *Rhododendrons* in front of the border struck me as being planted too thickly, and in a year or so they will form a complete hedge. For two months, when in flower, they will be very effective, but for ten months, when out of bloom, very monotonous. Might not this in some measure be remedied by substituting at suitable intervals among them a few free-flowering shrubs, as *Weigelas*, *Deutzias*, &c.? It would break this monotony and please the visitors better.

On reaching the head of the corridor and entering the interior of the palace the display of plants is charming. All honour to the cultivators, both for their skill in training them and for their judicious arrangement. Admiration was my predominant feeling, and admiration is an involuntary tribute of homage which the mind pays to excellence. The symptoms of delight and satisfaction depicted upon the countenances of the well-dressed ladies and gentlemen walking amid the rich foliage, and under the beautiful climbers, showed that this homage was sincere and unmistakable.

Who can estimate the extent and value of the moral influence thus happily excited in the breasts of thousands? And how it calls to mind those luxuriant and flowery regions

"Where beasts with man divided empire claim,
And the wild Indian takes his deadly aim."

Two years had elapsed since my last visit to the place, and the interval was marked by improvement.

It was a happy or well-designed idea to reserve the statelier and more tropical plants for the further end of the building, as the visitor moving onwards has his agreeable feelings carried to a climax instead of experiencing an abatement. The *Wellingtonia gigantea* was a new object, and a striking one; it reminded me, whilst standing before it, of the representations we see of the Eddystone Lighthouse, with its door of entrance at the bottom. Surprise approaching to wonder was experienced by others as well as myself; and wonder, we are told by Dr. Johnson, is the effect of novelty upon ignorance. What an amount of this feeling must have been excited if we reflect on the multitude of visitors who have here seen this vegetable giant for the first time!

There is a grandeur about tropical plants surpassing those of our clime, and the stranger may here enjoy their beauty exempt from their attendant drawbacks. He steps cautiously,

"but still without fears to wake
The rattling terrors of the vengeful snake."

An elegant little scarlet bird with a crest seemed quite at home in this region, whistling at the top of his voice; and, although often chased by his playmates from his elevated position, yet he no sooner reached another spray than he warbled again victoriously.

It was a beautiful summer's evening, and on going to the front balcony to enjoy the prospect I was disappointed at finding the improvements in the grounds had not apparently kept pace with those in the interior of the building. To the right of the great central walk all looked sylvan and appropriate, but to the left there was vacancy; more trees were wanted to make it a park, more flowers to make it a garden, and more shrubs to make it a pleasure ground. The few beds of flowers looked diminutive, toy-like, and lost upon so wide an extent of lawn. On traversing the walks you find

them disintegrated and very uncomfortable in places to tread upon, forcing the visitors to take to the grass in spite of its being prohibited. There were at least 6,000 persons present on the evening of my visit, and of this number not 300 were to be seen in the grounds. If a few more shrubby clumps were formed, and borders containing hardy herbaceous plants introduced, it would greatly improve the place and add to the pleasure and instruction of the visitors. At present there is not one-tenth of the variety of flowers which may be seen in many small, but well-kept country gardens. Flowers are silent teachers—they are God's messengers, day unto day uttering speech, not to the ear, but to the heart. The moral influence of flowers is great; they produce pleasurable feelings, and a pleasurable feeling derived from a pure source is a blessing; it bespeaks a mind in harmony with Nature, and satisfied with the dispensations of Providence. I witnessed the beneficial influence of flowers in an incident which occurred on my way to town. A lady entered the compartment of the railway carriage in which I was seated at Marks Tay, a small station on the Eastern Counties line. She held in her hand a large, fresh-gathered bouquet of flowers, the sight and fragrance of which were electric. All were eager to examine and admire them, and we travellers, who had before sat isolated and silently looking at each other, became of a sudden animated, pleasant associations were kindled, questions were asked and courteously answered, new ideas sprang up, and conversation flowed freely. The effect thus produced lasted to the end of the journey agreeably and profitably. Now, that which awakens in the mind fresh trains of thought may be looked upon as a monitor, and what furnishes the hour with innocent amusement may be regarded as a good. These unobtrusive and lesser ministrations to man's happiness, which form part of the Divine economy, are too much overlooked and too little appreciated. My remarks owe their origin to that nosegay.—S. P., *Rushmere*.

HARDY HERBACEOUS PERENNIALS IN BLOOM.—IPSWICH, JULY 17TH, 1857.

In addition to the list of hardy perennials flowering in my garden on the 20th of last month, and inserted in *THE COTTAGE GARDENER*, I now send another of such flowers as have since made their appearance, and are at present in blossom (July).

- Platycodon grandiflorum*, 1 foot, blue.
- Mulgedium Plumierii*, 4 feet, blue.
- Salvia bracteata*, showy, 3 feet, bracts tinged pink.
- " one or two others, names unknown, blue.
- Lychnis coronaria*, 1 foot 6 inches, dark pink.
- " " bicolor, 1 foot 6 inches, pink and white.
- " *dioica plena*, 1 foot, rose.
- Verbascum lagurus*, 5 feet, white.
- " *blattaria*, 4 feet, primrose.
- Cephalaria Tatarica*, 4 feet, yellow.
- Centaurea macrocephala*, 3 feet, yellow.
- Primula cortusoides*, 6 inches, pale pink.
- Gardoquia*, 1 foot, pink.
- Sanguisorba Canadensis*, 2 feet, white.
- Lilium eximium*, 1 foot, large, white.
- Phlox Van Houtte*, 2 feet, white, striped rose.
- " *Abdel Medschid Khan*, 2½ feet, white.
- Orange and White Lilies.
- Lythrum roseum superbum*, 3 feet, bright rose.
- Pentstemons*, various.
- Gaillardia Richardsonii*, 1 foot, yellow, dark eye.
- " *splendidissima*, 1 foot, red, brown, and yellow.
- Coreopsis lanceolata*, 1 foot 6 inches, yellow.
- Calystegia pubescens*, double white, climbing.
- Hypericum*, or St. John's Wort, yellow, dwarf.
- Alyssum saxatile*, 6 inches, yellow.
- Sedums*, various, rock plants.
- Arenaria cæspitosa*, rock plant, 3 inches, white.
- Myosotis alpestris*, 1 foot, light purple.
- Linaria cymbalaria*, trailer.
- " *Dalmatica*, 2 feet, yellow.
- Monarda didyma*, 2 feet, bright red.
- Oenothera speciosa*, 2 feet, white.

Oenothera fruticosa, 3 feet, yellow.
 „ *serotina*, 2 feet, yellow.
 „ *riparia*, 1 foot 6 inches, yellow.
 „ *macrocarpa*, 6 inches, yellow, spreading.
 „ *acaulis*, 6 inches, white.
Campanula coronata, 1 foot, white.
 „ *macrantha*, 2 feet, blue.
 „ *limbata*.
 „ *Grosbeckii*, 1 foot, blue.
 „ others, tall and dwarf, names unknown.
Betonica grandiflora, 1 foot 6 inches, pale rose.
Veronicas, various, blue, white, and pink.
Malva Morenii, 1 foot 6 inches, rose.
Alströmeria aurea, 2 feet, orange.
Morina longifolia, 2 feet, pink and white spikes.
Armeria vulgaris rosea, 9 inches, bright rose.
Convolvulus Cantabricus, pale rose, striped, climber.
 „ *althæoides*, pale rose, climber.
Ononis natrix, 6 inches, yellow.
Potentilla MacNabiana, 2 feet, orange red.
 „ *Garneriana*, 1 foot, yellow, red eye.
 „ others, names unknown.
Spiræa venusta, 3 feet, bright rose.
Stenactis speciosa, 2 feet, pale blue.
Teucrium Hyrcanicum, 1 foot 6 inches, purple spikes.
Phyteuma Hispanica, 2 feet, blue.
Gentiana cruciata, 6 inches, blue.
Achillea eupatorium, 3 feet, yellow.
 „ *tomentosa*, 6 inches, yellow.
 „ *ptarmica*, 2 feet, white.
 „ „ *pleno*, 2 feet, white.
Geranium pratense pleno, 1 foot, blue.
Erigerons, *Statice*s, specific names unknown.
Helenium autumnale, 1 foot 6 inches, yellow.
Galega Persica, 4 feet, white.
Chelone barbata, 3 feet, scarlet.
Gypsophila Steveni, 2 feet, white, graceful.

S. P., *Rushmere*.

THE STEWARTON SYSTEM OF BEE-KEEPING.—No. 4.

I HAVE delayed making up a report of the doings of the selected hives until to-day (July 20th), because I foresaw some changes which would render the operations necessary in weighing easier and more satisfactory. To give a view of the progress made I have stated the gross and net weights of Nos. 1 and 2 on June 15th:—

No. 1.		Gross.	Net.
July 20th, in three body and one honey-box .		70lbs.	53lbs.
July 8th, one honey-box taken off .		25 „	21½ „
July 20th, one body-box taken off .		35 „	30½ „
		130 „	105 „
June 15th, in two body-boxes .		32 „	23½ „
Gain in honey, wax, and bees .		98 „	82½ „
No. 2.			
July 20th, in four body and one honey-box .		86lbs.	65lbs.
July 20th, two honey-boxes taken off .		43 „	37 „
		129 „	102 „
June 15th, in two body-boxes .		27 „	18½ „
Gain		102 „	83½ „

No. 3, in local language, “went back.”

On July 11th I resolved to end its existence as a separate kingdom. To secure the death of the queen I caged her during the day. Her subjects were joined to another hive at night. The queen was in a diseased condition, and breeding had been at an end for some time. Attempts had been made to breed a young sovereign, but without success.

No. 1.—June 16th. Added body-box below, as the hive showed signs of crowding. I did not add a honey-box, because I wished the white Clover to be in bloom before I gave the bees an opportunity of commencing their choicest work.

June 22nd. The three body-boxes being well filled, added a honey-box.

June 23rd. Having a prospect of obtaining more than one honey-boxful, added a second honey-box.

July 8th. Took off a full honey-box.

July 9th. Room being required, added a body-box below.

July 20th. Took off the top body-box. This was done with a view to hasten and secure the finishing of the remaining honey-box, which apparently contains about 14lbs.

No. 2.—June 18th. Added a three-inch “raise.”

June 24th. Removed the “raise,” and added a honey-box at 6 a.m. Finding the honey-box filled with bees at noon, added a body-box below.

July 5th. The honey-box being well filled, added another.

July 9th. Bees appearing at work in the top honey-box, added a fourth body-box below.

July 20th. Removed two full honey-boxes, and, to give the bees an opportunity to make more fine comb, added a honey-box. Our season, however, is just about to close.

Both hives were ventilated during the hottest weather by raising them with wedges as far as possible, without allowing the passage of a bee. I had less trouble with my hives during the hot weather in June than I have had on similar occasions, because the heat occurred before the hives had reached their full strength. Since reaching the *maximum* of number the temperature has been very moderate.

The box of honeycomb taken off No. 1 on the 8th of July is complete, every part being beautifully sealed and finished. The colour is slightly affected, more especially at the sides, where work is always first commenced. The body-box taken off on the 20th of July is the best of the kind I ever saw. It is full of the finest honey, sealed and finished, and not a single maggot in the box. The honey-boxes taken off No. 2 are of different sizes; one weighs 25lbs., the other 18lbs. gross. The large one is complete, the smaller one is scarcely all sealed, but it is quite marketable. The colour of these two boxes is unexceptionable. There is no appearance of brood in any of the honey-boxes referred to.

Between the 15th and 28th of June we had as fine a spell of *bee weather* as could be desired. This was a most propitious occurrence, for at this season the wild Mustard yielded its sweets, and as it began to fail the white Clover shot up its “opening flowers” in abundance by the highways and byways. The opportunity was good; nor did our little caterers fail to take advantage of this “tide in their affairs, which, taken at the flood, led on to”—full boxes.

The period alluded to was hotter than usual. I regret that I did not use a thermometer in my bee-house. Since the 28th of June we have had occasional showers, but delightful weather throughout.

The hives about which I write will each contain, I should say, at least fifty thousand bees. I imagine the chief cause of the success attending our system is the adoption of every available means to insure strength, so as always to have a large number of hands ready “to make hay while the sun shines.”

The inducement to secure number is increased when we have reason to believe that *the many* are just about as easily supported as *the few*.

I have taken a few notes connected with the management of some swarms, which I will report, if acceptable, after we have got the above stocks settled down for a season. By waiting till that time we may save confusion, and I find, on reflection, that without such an account the outline of “our system” would be incomplete.—ROBERT WILSON, *Stewarton*.

[We shall be obliged by your report as soon as suits your convenience.—ED. C. G.]

PHOTOGRAPHY.—DEVELOPING COLLODION PICTURES NEGATIVELY.

I HAVE almost confined my study of photography to printing from negative collodion glasses. Now, the first set I had taken were not so intense as they ought to have been, and print very indistinctly. They are varnished with transparent varnish in the usual way. Can I use any means to render these *more intense*? or, if not, what preparation would print them *most clearly*? and is anything better for

producing clear *black* tones than paper prepared with gelatine and salt? (Hardwich's second formula).—WEST HILL.

[The process given in our number for May 19 was that for producing *positive* pictures. For *negative* plates the following solution must be substituted for that marked **C**. (Page 108.)

SOLUTION FOR DEVELOPING COLLODION PICTURES
NEGATIVELY.

Mix { Pyrogallic acid.....3 grs.
Glacial acetic acid1 drachm } 6d.
Distilled water.....2 ozs.

The resulting photographs are perfectly intense.

Photographic printing artists produce their black tones by the use of chloride of gold. This chemical costing more than £3 per oz. is not suitable for "cottage gardeners," and the resulting pictures cannot be said to be permanent.

We do not recommend the gelatine process. By varying the strength of the solutions of salt and silver (*see* COTTAGE GARDENER for March 17) almost any tone is producible. Try 10 grs. salt to each ounce of water. For solution **A** use 80 grs. nitrate of silver to 1 oz. distilled water.

The following receipt is fresh from the Continent, and M. Sella states that by its means he prints intensely black photographs.

SOLUTIONS.

- A.**—2 ozs. saturated solution of bichromate of potash, 6d.
B.—5 parts proto-sulphate of iron in 100 parts water, 2 ozs., 3d.
C.—10 grs. gallic acid in 2 ozs. distilled water, 4d.

Soak the paper in solution **A**. Dry. Expose in pressure frame. Soak in a large quantity of water till the yellow parts of the picture have become white.

Place in solution **B** three or four minutes. Wash well in different waters.

Plunge in solution **C** till sufficiently developed. Wash.
—E. A. COPLAND, *Chelmsford*.]

HOWQUA'S GARDEN.

THIS garden is situated near the well-known Fa-tee nurseries, a few miles above the city of Canton, and is a place of favourite resort both for Chinese and foreigners who reside in the neighbourhood, or who visit this part of the Celestial Empire. I determined on paying it a visit in company with Mr. McDonald, who is well known in this part of the world as an excellent Chinese scholar, and to whom I am indebted for some translations of Chinese notices, which appeared very amusing to us at the time, and which, I daresay, will amuse my readers.

Having reached the door of the garden, we presented the card with which we were provided, and were immediately admitted. The view from the entrance is rather pleasing, and particularly striking to a stranger who sees it for the first time. Looking "right ahead," as sailors say, there is a long and narrow-paved walk lined on each side with plants in pots. This view is broken, and apparently lengthened, by means of an octagon arch which is thrown across, and beyond that a kind of alcove covers the pathway. Running parallel with the walk, and on each side behind the plants, are low walls of ornamental brickwork, latticed so that the ponds or small lakes which are on each side can be seen. Altogether the octagon arch, the alcove, the pretty ornamental flower-pots, and the water on each side, has a striking effect, and is thoroughly Chinese.

The plants consist of good specimens of southern Chinese things, all well known in England, such, for example, as *Cymbidium Sinense*, *Olea fragrans*, Oranges, Roses, Camellias, Magnolias, &c., and, of course, a multitude of dwarf trees, without which no Chinese garden would be considered complete. In the alcove alluded to there are some nice stone seats, which look cool in a climate like that of southern China. The floor of this building is raised a few feet above the ground level, so that the visitor gets a good view of the water and other objects of interest in the

garden. That this is a favourite lounge and smoking-place with the Chinese, the following Chinese notice, which we found on one of the pillars, will testify:—"A careful and earnest notice: This garden earnestly requests that visitors will spit betle * outside the railing, and knock the ashes of pipes also outside." Several fine fruit trees and others are growing near the walks, and afford shade from the rays of the sun. On one of these we read the following:—"Ramblers here *will be excused* plucking the fruit on this tree." How exceedingly polite!

Near the centre of the garden stands a substantial summer-house, or hall, named "the Hall of Fragrant Plants." The same notice to smokers and chewers of betle-nut is also put up here; and there is another and a longer one which I must not forget to quote. It is this:—"In this garden the plants are intended to delight the eyes of all visitors: a great deal has been expended in planting and in keeping in order, and the garden is now beginning to yield some return. Those who come here to saunter about are earnestly prayed not to pluck the fruit or flowers, in order that the beauty of the place may be preserved." And then follows a piece of true Chinese politeness—"We beg persons who understand this notice to excuse it!" Passing through the Hall of Fragrant Plants we approached, between two rows of *Olea fragrans*, a fine ornamental suite of rooms tastefully furnished and decorated, in which visitors are received and entertained. An inscription informs us that this is called "the Fragrant Hall of the Woo-che tree." Leaving this place by a narrow door, we observed the following notice:—"Saunterers here will be excused entering." This apparently leads to the private apartments of the family. In this side of the garden there is some fine artificial rockwork, which the Chinese know well how to construct, and various summer-houses tastefully decorated, one of which is called the "Library of Verdant Purity." Between this part of the garden and the straight walk already noticed there is a small pond or lake for fish and Water Lilies. This is crossed by a zigzag wooden bridge of many arches, which looked rather dilapidated. A very necessary notice was put up here informing "saunterers to stop their steps in case of accident."

On the outskirts of the garden we observed the potting sheds, a nursery for rearing young plants and seeds, and the kitchen garden. Here a natural curiosity was pointed out by one of the Chinese, which, at first sight, appeared singularly curious. Three trees were growing in a row, and at about twenty or thirty feet from the ground the two outer ones had sent out shoots, and fairly united themselves with the centre one. When I mention that the outer trees are the Chinese Banyan (*Ficus nitida*), it will readily be seen how the appearance they presented was produced. The long roots sent down by this species had lovingly embraced the centre tree, and appeared at first sight to have really grafted themselves upon it.

I am afraid I have given a very imperfect description of this curious garden. Those who know what a Chinese garden is will understand me well enough, but it is really difficult to give a stranger an idea of the Chinese style which I have been endeavouring to describe. In order to understand the Chinese style of gardening it is necessary to dispel from the mind all ideas of fine lawns, broad walks, and extensive views; and to picture in their stead everything on a small scale—that is, narrow-paved walks, dwarf walls in all directions, with lattice-work or ornamental openings in them, in order to give views of the scenery beyond; halls, summer-houses, and alcoves, ponds or small lakes with zigzag walks over them—in short, an endeavour to make small things appear large, and large things small, and everything Chinese. There are some of these ornaments, however, which I think might be imitated with advantage in our own gardens. Some of the doorways and openings in walls seemed extremely pretty. In particular I may notice a wall about ten feet high, having a number of open compartments filled with porcelain rods made to imitate the stems of the bamboo. I shall now close this notice with the modest lines of the Chinese poet, which we found written in the "Library of Verdant Purity," and

* Betle-nut is much used by the southern Chinese.

which seemed to be an effort to describe the nature of the garden:—

"Some few stems of bamboo-plants
A cottage growing round;
A few flowers here—some old trees there,
And a mow * of garden ground."

—(*Fortune's Residence among the Chinese.*)

TO CORRESPONDENTS.

SODA ASH (*A Young Novice*).—This is the refuse obtainable at soap manufactures. It is useful on heavy as well as light soil. Professor Way states that it is composed of the ingredients and in the proportions as follows:—Common salt, 19.94; carbonate of soda, 38.59; sulphate of soda, 14.31; caustic soda, 16.60; carbonate of lime, 10.26; per-oxide of iron, 2.74; silica, 1.52; loss and sand, 2.04. — (*Johnson's Farmer's Almanac.*)

TOMTITS (*Theophilus*).—We know of no mode of getting rid of these bud destroyers than by the gun, or tomtit traps baited with a piece of suet.

BLANCHEFLEUR GERANIUM.—Messrs. Cutbush and Son, Highgate Nurseries, have the whole stock of this Geranium, and not Mr. Parker. They will send it out early next spring.

PEAR TREE (*J. S., Hooton*).—As soon as your central leader gets above the windows you may pinch it, thus causing the production of many branches where the greatest amount of room exists.

BEE TRAP (*An Apiarian of a Year*).—If you will purchase No. 99 of *THE COTTAGE GARDENER* you will obtain, at p. 323, a drawing and additional explanation of this. If you need further directions after seeing that, write to the inventor, R. Antram, Esq., Slapton, near Dartmouth.

SEED OF BERBERIS DARWINII (*Carrig Cathol*).—Your seed of this beautiful evergreen, ripened in Wales, should be sown in light soil immediately in the open ground. The seedlings will appear next spring. Sow in drills in the open ground beneath a south wall, burying the berries barely half an inch deep. If the winter prove very severe spread a little litter or place a reed panel over the seed-bed. We should thoroughly dry the berries before sending them to Australia, put them into little canvass bags, and get some friend to hang them up in his cabin during the voyage. Heating and moisture, which are insured by putting large bulks of seeds in close packages or in the hold of a ship, cause the seeds to sprout and destroy them. Have you noticed that the ripe berries, when shrivelled, taste like the currants of the grocers?

PEAR-TREE LEAVES DISEASED (*W. M.*).—We do not think your leaves are suffering from insects, but from some fungus. We should dust over them a mixture of lime and sulphur, three parts of the first to one of the second. Are your trees growing where the air is stagnant, or the soil heavy and ill-drained?

PAPAYER CROCEUM (*Upwards and Onwards*).—Many thanks. It is an old favourite, and the first Poppywort of the season, but not a Poppy of the botanists, who call it *Meconopsis Cambrica*.

PRESERVING FRUIT (*A Constant Subscriber*).—What kind of fruit? Do you mean preserving in sugar?

SPIRÆA PRUNIFOLIA ALBA PLENA, &c. (*M. F.*).—*Spiræa prunifolia* comes very easily from young cuttings in the spring, not now, if they are managed exactly like cuttings of Fuchsias; and propagators find no difficulty in striking cuttings of the Darwin Berberry in the same way. Use very young wood and smart bottom heat under a bellglass, and why you should not be as lucky as them depends on your own cleverness. Make cuttings of your *Beauty of Billard* Rose just at the moment the cuttings are ready to be made. Summer cuttings of all Roses were ready when the plants were going out of their first bloom, the little spurs which carried the bloom being the best wood for cuttings in June and July, and, until younger shoots of the same size, and length, and strength are above half ripe or turning hard down at the heel, slip them off as you would a Wallflower slip, smooth the heel, cut all the leaves off except the two topmost, and cut the middle or top one of each of these leaflets; let the cuttings be four inches long, and put them one inch and a half deep in the pot, but pots are bad things for Rose cuttings in such hands as wrote your letter. The Oleander cuttings are very ticklish; they will root very freely if they are exactly of the proper age, and they will look green for months and months, and not make the smallest progress if they are too old or too young. The right age for such cuttings can only be learned by practice; but try the young *smaller* shoots when three inches long, and take a slight heel with them. Now is not a bad time if you can keep them under a glass.

NAMES OF PLANTS (*G. C. B.*).—Your singular shrub is the *Arbutus andrachne*, or Oriental Strawberry tree. This tree is but seldom seen in gardens, but there is a fine old plant in the Close at Winchester, in the garden belonging to Canon Carus, planted, no doubt, by his predecessor, Mr. Poulter, who was a botanist. This tree varies very much in the shape of its leaves in different specimens, and even on the same tree, not only in the margins being entirely or slightly serrated, but in approaching more or less to a round, oval, or lanceolate form. The most remarkable circumstance in this species is, that in the spring it sheds the old red bark, and the young bark is at first green, then turns whitish, and afterwards to different shades of brown, and finally, on the approach of winter, to a deep red. Young plants of it require a little protection, and old plants sometimes suffer in severe winters. This is one reason why they are so seldom seen in gardens, or only with

collectors of rare plants. (*J. W., St. Ann*).—The double yellow flower is the double yellow Rocket, or the Herb of St. Barbara, *Barbarea vulgaris pleno*, which should be replanted every year in the spring. The light hoary plant is the *Cineraria maritima*, which Mr. Beaton has spoken of so many times. The pea-blossom flower is the *Galega officinalis*, the Official Galangale, a very ornamental plant. (*An Old Subscriber, Hastings*).—The botanical name of your curious plant is *Medicago scutellata*, but commonly called the Snail plant, or Snail-podded Medick. It is an annual, and native of the south of Europe. It is propagated by seeds, which ripen freely, and should be sown early in April in the open borders. (*Margaret*).—Your plant is *Dictamnus fraxinella*, a hardy herbaceous plant. It should remain for years with its roots undisturbed. The seed-vessels retain their scent when dry, and are preserved in *pot pourri*, &c.

CASTOR-OIL PLANT (*N. D., Cowans*).—The Castor-oil plant, or *Palma Christi*, or *Ricinus communis*, forms a very interesting object in the flower borders during the summer months, and will ripen its seeds freely in the south of England. It should be treated as a tender annual; that is, sown in pots and placed in the hotbed about the end or last week in March; and, when up and large enough to handle well, the seedlings should be potted off singly in four-inch or six-inch pots, as it is a freely-growing plant, and be put into the hotbed again, and well watered to settle the earth to the roots. As it is such a free grower the plants may require another shift into larger pots before the end of May, when they should be hardened off, and then planted out in the open borders, where they will grow to a large size if they have sufficient room and the garden soil is pretty good. In most cases the whole plant is of a beautiful glaucous-green hue, rising from three to five feet high, and producing very large palmated leaves. The seeds are sold by all respectable seedsmen.

SOWING FLOWER SEEDS (*R. H. C.*).—The *Pansies* we should sow in the spring months. Sown in pans and forwarded in a gentle hotbed about the middle of March they will flower during the summer and autumn months; and sown in May they will furnish good strong plants for planting out to flower the following spring in beds. It is too late now to sow for filling the beds this autumn. *Virginian Stock*, *Nemophilas*, or any other kind of hardy annuals, may be sown from the 10th to the 16th of August in some by-place in the open ground, to stand the winter for transplanting into the flower-beds, or the two mentioned would be better if sown where they are to flower about that time, although anything can be transplanted with certain success where there is a will to do it. October and November will be the best time to plant the *Hepaticas*, *Scillas*, *Doronicum Austriacum*, and *Dog's-tooth Violets*. They are all to be had from the respectable nurseries, and they can be potted for a time if your beds are not ready for them when they come to hand; and when planted, or afterwards, the eye should be upon them now and then to see that all goes on well. Your Fern is *Lustræa filix-mas*.

WINTER LETTUCE (*J. G. M.*).—You can obtain the *Brown Cilicia* from any of the principal seedsmen in London. We grow, except under glass, none but the *Brown Dutch*. Under glass we grow the *Bath Cos*.

MOSSY LAWN (*K. T. E.*).—Moss is no security against a lawn burning in summer. A lawn we know is now quite brown, although so mossy as to be as soft to the feet as a Persian carpet. We were on another lawn recently without moss, and it jarred the whole frame at each footfall. We will give a list of Roses next week.

ROSE LEAVES GRUB EATEN (*D.*).—Your Roses have been under the operation of one of the most industrious of the mining caterpillars, a very small greenish white kind, which can easily be found under the leaves every morning as long as any are about. We have destroyed them by the dozen by one stroke of the forefinger of the right hand, while we held the leaf upside down with the left hand, and that is the simplest and the safest way to get rid of them. Although we never spare these marauders, we admire their work exceedingly: four of them will skeletonise as much surface of leaves as one lady could do in three months. The best remedy against a brood of them next year is to have the stems well scraped after the plants are pruned, and then to paint them all over and down to the roots with clay paint, coloured grey with fresh soot and hot lime. Every Rose tree or bush would be the better for such a coat of paint every year of its life, and two or three coats in succession are not too much for infested plants. This simple paint, which a schoolboy could make and sell for twopence per gallon, is worth all the quackery that ever was thought of for keeping down insects, and for covering all kinds of in-door grafting.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

AUGUST 8th, 10th, 11th, and 12th. CRYSTAL PALACE. Sec., W. Houghton.

AUGUST 26th. BRADFORD. Secs., M. Brooksbank and H. Beldon Esqs., 12, Queensgate Street, Bradford. Entries close August 18th.

AUG. 29th. CALDER VALE. Sec., W. Irvine, Esq., Holmefield, Halifax. Entries close August 15th.

SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.

SEPTEMBER 4th. SOWERBY BRIDGE. Sec., F. Dyson, Esq. Entries close August 26th.

SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Sec., Mr. H. Churchill, King's Head Hotel.

OCTOBER 1st and 2nd. WORCESTER. Sec., Mr. G. Griffiths, 7, St. Swithin Street, Worcester. Entries close Sept. 19th.

OCTOBER 7th. SOUTH WEST MIDDLESEX AGRICULTURAL SOCIETY. At Gunnersbury Farm, Ealing. Sec., J. Gotelee, Hounslow.

NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.

DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.

* A mow is about the sixth part of an acre.

DECEMBER 30th and 31st. BURNLEY AND EAST LANCASHIRE. Entries close December 1st. Secs., Angus Sutherland and Ralph Landless.

JANUARY 4th, 1858. KIRKCALDY POULTRY AND FANCY BIRD SHOW. Sec., Mr. Bonthron, jun., Thistle Street.

JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.

JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.

FEBRUARY 3rd and 4th, 1858. PRESTON AND NORTH LANCASHIRE. Secs., Mr. R. Teebay and Mr. H. Oakey, Preston.

N.B.—Secretaries will oblige us by sending early copies of their lists.

SHEFFIELD POULTRY SHOW.

THIS was held on the 28th, 29th, and 30th of July. We shall have some comments to offer probably next week, and now merely give a list of the awards.

SPECIAL PRIZES.

SILVER CUP (Twelve Guineas) for the Best Three Pens of any variety, J. Dixon, North Park, Bradford.

GENTLEMAN'S TOOL CHEST (Ten Guineas) the Gift of Messrs. T. TURTON & SONS, for the Second Best Three Pens, P. P. Jones, High Street, Fulham.

CASE OF TABLE CUTLERY (Five Guineas) for the Third Best Three Pens, G. C. Peters, Birmingham.

CASE OF SCISSORS, RAZORS, AND A SPORTSMAN'S KNIFE (Three Pounds) for the Fourth Best Three Pens, Mrs. H. Sharp, Mill Lane, Bradford.

SILVER CUP (Ten Guineas) the Gift of Messrs. HAWKSWORTH, EYRE, & Co., for the Best Single Game Cock, Wm. Dawson, Birmingham.

SILVER PLATED TEA SERVICE (Six Guineas) the Gift of Mr. Wm. SYLVESTER, for the Best Pen of Polands of any variety, J. F. Greenall, Grappenhall Hall, near Bristol.

SILVER CUP (Three Guineas) the Gift of Mr. Wm. WOOD, for the Best Pen of Black Spanish, George Botham, Wexham Court, Slough, Bucks.

SILVER CUP (Three Guineas) the Gift of Mr. C. E. BROADBENT, for the Best Pen of Game of any variety, W. Johnson, High Grounds, Worksop.

CASE OF HORTICULTURAL KNIVES, the Gift of Mr. JAMES SMITH, for the Best Pen of Bantams of any variety, E. Stansfield, Dewsbury.

ONE GUINEA, the Gift of Mr. JOSEPH DEAKIN, for the Best Carrier Cock of any colour, James Billycald, Hyson Green, Nottingham.

SPANISH.—First, G. Botham, Slough, Bucks. Second, W. W. Brundret, Runcorn, Cheshire. Third, R. Teebay, Preston. *Chickens of 1857.*—First, P. P. Jones, High Street, Fulham. Second, M. Ridgeway, Dewsbury.

DORKINGS (Coloured).—First, C. R. Titterton, Birmingham. Second, G. Botham, Slough, Bucks. Third, Rev. G. Hustler, Appleton. *Chickens of 1857.*—First, Capt. W. W. Hornby, Prescott. Second, Sir J. Nelthorpe, Scawby Hall.

DORKINGS (White).—Prize, H. Lingwood, Suffolk. *Chickens of 1857.*—Prize, J. K. Fowler, Aylesbury.

GAME FOWL (White and Piles).—First, J. Camm, Farnsfield. Second, G. Haigh, Holmfirth. Third, Capt. W. W. Hornby, Prescott. *Chickens of 1857.*—First, W. Johnson, High Grounds, Worksop. Second, Messrs. Bairstow and Eastwood, Ovenden, near Halifax.

GAME FOWL (Black-breasted and other Reds).—First, W. Johnson, High Grounds, Worksop. Second, Capt. W. W. Hornby, Prescott. Third, W. Dawson, Birmingham. *Chickens of 1857.*—First, R. Wood, Osberton, Worksop. Second, W. Cadman, Handsworth.

GAME FOWL (Black and Brassy-winged except Greys).—First, J. Edwards, Leamington. Second, W. Dawson, Birmingham. *Chickens of 1857.*—Prize, J. Hall, Kiveton Park. (Only one entry in this class.)

GAME FOWL (Duckwings and other Greys and Blues).—First, E. Frith, Turner Wood, near Worksop. Second, G. Robinson, Thorpe Salvin. Third, W. Johnson, High Grounds. *Chickens of 1857.*—First, Mrs. H. Sharp, Bradford. Second, E. Wright, Manningham.

COCHIN-CHINA (Cinnamon and Buff).—First and Third, T. Stretch, Bootle, Liverpool. Second, H. James, Walsall. *Chickens of 1857.*—First, T. Stretch, Bootle. Second, J. K. Fowler, Aylesbury.

COCHIN-CHINA (Brown and Partridge-feathered).—First, P. Cartwright, Oswestry. Second, H. Tomlinson, Birmingham. Third, W. Harvey, Sheffield. *Chickens of 1857.*—First, J. Bradwell, Southwell, Notts. Second, W. Harrison, Rotherham.

COCHIN-CHINA (White or Black).—First, G. C. Peters, Birmingham. Second, J. Dixon, Bradford. Third, R. Teebay, Preston. *Chickens of 1857.*—First, G. C. Peters, Birmingham. Second, J. K. Fowler, Aylesbury.

BRAHMA POOTRA (Light or Dark).—First, R. Teebay, Preston. Second, W. Harvey, Sheffield. *Chickens of 1857.*—First, P. P. Jones, Fulham. Second, J. K. Fowler, Aylesbury.

MALAY.—First, W. Rogers, Woodbridge. Second, M. Ridgway, Dewsbury.

GOLDEN-PENCILLED HAMBURGH.—First, M. H. Broadhead, Holmfirth. Second, Mrs. H. Sharp, Bradford. Third, the Hon. Master Monckton, Bawtry. *Chickens of 1857.*—First, J. Dixon, Bradford. Second, W. Ludlam, Bradford.

GOLDEN-SPANGLED HAMBURGH.—First, W. R. Lane, Birmingham. Second, H. Carter, Holmfirth. Third, W. C. Worrall, Liverpool. *Chickens of 1857.*—First, G. Haigh, Holmfirth. Second, J. Dixon, Bradford.

SILVER-PENCILLED HAMBURGH.—First, Mrs. H. Sharp, Bradford. Second, J. Dixon, Bradford. Third, P. W. Barnard, Brigg. *Chickens of 1857.*—First, Mrs. H. Sharp, Bradford. Second, J. Dixon, Bradford.

SILVER-SPANGLED HAMBURGH.—First, R. Teebay, Preston. Second, J. Dixon, Bradford. Third, H. Carter, Holmfirth. *Chickens of 1857.*—First, J. Dixon, Bradford. Second, Mrs. H. Sharp, Bradford.

POLAND FOWL (Black with White Crests).—First and Second, T. Battye, Holmfirth. Third, J. Conyer, Leeds. *Chickens of 1857.*—First, G. Ray, Lyndhurst, Hants. Second, W. I. Ronksley, Sheffield.

POLAND FOWL (Golden).—First, J. Dixon, Bradford. Second, J. F. Greenall, Warrington. Third, R. H. Bush, Clifton. *Chickens of 1857.*—Prize, J. Dixon, Bradford.

POLAND FOWL (Silver).—First, J. F. Greenall, Bristol. Second, W. Dawson, Birmingham. Third, J. Dixon, Bradford. *Chickens of 1857.*—First, P. P. Jones, Fulham. Second, J. Dixon, Bradford.

REDCAPS.—First, W. Adams, Sheffield. Second, J. Hollins, Owlerton. Third, J. Battison, Sheffield. *Chickens of 1857.*—First, A. Nicholson, Sheffield. Second, B. Oates, Sheffield.

SULTANS.—First, W. Dawson, Hopton Mirfield. Second, A. Watkin, Sheffield.

FOR ANY OTHER DISTINCT BREED.—First, J. F. Greenall, Warrington (White Polands). Second, Mrs. H. Sharp, Bradford (Black Hamburgs). Third, H. Townsend, Burton-on-Trent (Crève Cœurs).

BANTAMS (Golden-laced).—First, G. C. Adkins, Birmingham. Second, J. Monsey, Norwich. Third, J. Dixon, Bradford.

BANTAMS (Silver-laced).—First, G. C. Peters, Birmingham. Second, F. Blagg, Retford. Third, J. Monsey, Norwich.

BANTAMS (Black).—First, J. Monsey, Norwich. Second, W. M. Spence, Weston. Third, J. J. Horton, Birmingham.

BANTAMS (White or any other Colour).—First, E. Stansfield, Dewsbury. Second, J. Dixon, Bradford. Third, G. C. Adkins, Birmingham.

SINGLE COCKS.—Prizes: W. Dawson, Hopton (Spanish); W. Harvey, Upperthorpe (Dorking); W. Dawson, Birmingham (Game); G. W. Lamb, Sheffield (Cochin-China); Mrs. Parkinson, Newark (Hamburg, Golden-pencilled or Spangled); Mrs. H. Sharp, Bradford (Hamburg, Silver-pencilled or Spangled); W. Gee, Sheffield (Poland); T. Bird, Sheffield (Redcap); J. Dixon, Bradford (Brahma Pootra).

GEESE.—First, J. Richardson, Thorne. Second, W. Kershaw, Haywood.

DUCKS (White Aylesbury).—First, J. K. Fowler, Aylesbury. Second, Mrs. Parkinson, Newark.

DUCKS (Rouen).—First, B. H. Brooksbank, Tickel. Second, Mrs. Parkinson, Newark.

DUCKS (any other variety).—First, J. Dixon, Bradford. Second, S. Burn, Whitby.

TURKEYS.—First, J. Chinn, Birmingham. Second, G. W. Lamb, Sheffield.

PIGEONS.—Carrier Cock.—Prize, J. Billycald, Hyson Green. Blue Carriers.—Prize, J. Deakin Sheffield. Black Carriers.—Prize, J. Colley, Sheffield. Dun Carriers.—Prize, J. Colley, Sheffield. Almond Tumblers.—Prize, G. C. Adkins Birmingham. Balbs, Beards, and Mottled Tumblers.—Prize, J. Billycald, Hyson Green. Owls.—Prize, C. Cotton, Crewe. Nuns.—Prize, S. H. Hyde, Ashton-under-Lyne. Turbits.—Prize, Mrs. Parkinson, Knapthorpe, Newark. Archangels.—Prize, G. C. Adkins, Birmingham. Jacobins.—Prize, H. Simpson, Northampton. Antwerps.—Prize, J. Deakin, Sheffield. Fantails.—Prize, G. C. Adkins, Birmingham. Trumpeters.—Prize, S. H. Hyde, Ashton-under-Lyne. Powters.—Prize, G. C. Adkins, Birmingham. Barbs.—Prize, G. C. Adkins, Birmingham. Runts.—Prize, G. C. Adkins, Birmingham. Dragoons.—Prize, H. Child, jun., Birmingham.

RABBITS.—Rabbits for length of ears.—First, H. Child, jun., Birmingham. Second, J. Lawrence, Birmingham. Coloured Rabbits.—First, G. D. Owen, Rotherham. Second, Ben. Gale, Sheffield. Rabbits for weight.—G. D. Owen, Rotherham. Second, R. Jackson, Sheffield.

CRYSTAL PALACE POULTRY SHOW.

As in all probability many of your readers intend exhibiting their birds at the ensuing Show at the Crystal Palace, perhaps some of them could inform me what arrangements the Company have made for returning those birds which are intrusted to their care. I have already applied twice to Mr. Houghton for information on this subject, and the first time he inclosed me a schedule, saying

that that would answer my inquiry, whereas it never contained a single word upon the subject, and to my second application (made about a week or ten days back) he has not vouchsafed any reply.

I should also be glad to know whether or not the Company's declaration that "they will not hold *themselves* responsible for any loss or damage that may happen to the birds" will in law absolve them from any claim of compensation in the event of their suffering from accident or neglect, since it is possible that, although *they* decline the honour, the law may consider them as liable in such an event.—A. STONHOUSE GRIFFITH.

[For any loss sustained owing to the negligence or wilfulness of their servants the Company would be liable; but we do not think this likely to arise, for last year the birds were very well taken care of. For any accident or loss arising from unforeseen or unavoidable causes we do not think any exhibitor would expect, nor would he be entitled to compensation. Exhibitors should remember that, although the Company obtain a profit by the Show, yet that they confer a great boon upon poultry-keepers by offering and paying faithfully such liberal prizes.]

BRIDLINGTON AGRICULTURAL SOCIETY'S POULTRY SHOW.

THIS was held on the 22nd of July. There were 177 entries. The Judges were W. Jowsey, Esq., Hull; W. Stead, Esq., Leeds; and J. Booth, Esq., Pickering, who awarded the prizes as following:—

COCHIN-CHINAS.—First, T. H. Barker, Hovingham. Second, Miss Creyke, Marton Hall. *Best Cock.*—T. H. Barker, Hovingham.

DORKINGS.—First and Second, W. Charter, Driffield. *Best Cock.*—No entry.

SPANISH.—First, Dr. Pierson, Quay. Second, W. Dawson, Hopton. *Best Cock.*—Dr. Pierson, Quay.

GAME.—First, J. Marr, Muston. Second, Mrs. Crawford, Hunmanby. *Best Cock.*—J. Laycock, Driffield.

POLANDS.—First and Second, G. Winter and Holloway.

GOLDEN PHEASANTS.—First, H. Adams, Beverley. Second, J. Simpson, Hull.

SILVER PHEASANTS.—First, H. Adams, Beverley. Second, B. Garton, Bridlington.

HAMBURGHES (Golden-pencilled).—First, Mrs. Smith, Driffield. Second, Miss E. Smith, Driffield.

HAMBURGHES (Silver-pencilled, or Chitteprats).—First, E. Tindall, Bridlington. Second, W. M. Harrison, Bridlington.

BANTAMS (Golden-laced).—First, G. Limon, Bridlington. Second, M. Lister, Bridlington.

BANTAMS (Silver-laced).—Second, G. Winter, Hull.

BANTAMS (White).—First and Second, Miss E. Clarke, Hunmanby.

BANTAMS (any other colour).—Prize, E. Carter, Driffield.

CHICKENS (Six distinct varieties hatched in 1857).—First, C. Fox, Bridlington. Second, G. Grimshaw, Bridlington.

GEESE.—First, Mrs. W. Dixon, Settrington. Second, Mrs. T. Crompton, Bridlington. *Three Geese hatched in 1857.*—Prize, J. Smith, Marton Lodge.

TURKEYS.—First, Mrs. Dixon, Settrington. Second, Mrs. Jarratt, Harpham. *Three Turkeys hatched in 1857.*—Mrs. Edwards, Flixton Carr.

DUCKS (Aylesbury).—First and Second, Miss Polly Taylor, Sewerby Cottage. *Couple of Ducks hatched in 1857.*—Prize, Miss Polly Taylor, Sewerby Cottage.

DUCKS (any variety).—First, T. H. Barker, Hovingham. Second, T. Oliver, Winteringham. *Couple of Ducks hatched in 1857.*—Prize, H. Dowsland, Rudston.

GUINEA FOWLS.—First, R. Crowe, Speeton. Second, Miss Creyke, Marton Hall.

PIGEONS.—*Croppers.*—Prize, H. Yardley, Birmingham. *Tumblers.*—Prize, D. B. Turner, Hull. *Fantails.*—Prize, S. Bielby, Beverley. *Carriers.*—Prize, S. Bielby, Beverley. *Jacobins.*—Prize, S. Hewson, Beverley. *Any new or distinct variety.*—Prize, J. Kingston, Flambrø.

RABBITS.—First, Master F. Allison, Bridlington. Second, no competition. *Best Fancy Rabbit.*—Prize, P. Boulton, Beverley.

MR. HEWITT AND THE POULTRY JUDGES.

I HAVE just received THE COTTAGE GARDENER for July 14, in which Mr. Hewitt calls upon me to lay aside my incognito. He has given no valid reason for this demand, or I would at

once have complied with it. Had I made wholesale accusations against Mr. Hewitt or other Poultry Judges I would have assumed the responsibility by attaching my signature; but it must be clear to every one who has read my communication that it is merely a reply to Mr. Hewitt's remarks on poultry judging, and to certain alterations which he proposes. The arguments I adduced must stand on their own merits, and it is only of the most trivial, or rather, of no importance at all, by whom they were written. Such being the nature of my communication there is nothing which justifies Mr. Hewitt in calling upon me to disclose my name, and I cannot conceive for what reason he makes the demand. If he believes I am actuated by feelings of personal hostility he is entirely under a delusion. So perfect a stranger is Mr. Hewitt to me that I do not even know him by sight, and in his capacity of Poultry Judge I am about the last man to have any quarrel with him, as I believe the only occasion he judged any fowls of mine he awarded them a first prize.

I regret that your correspondent "JUSTICE" has misunderstood the sense in which I used the word "gratification." I was referring to the curiosity excited among poultry amateurs by Mr. Hewitt's letter, and merely meant to express that he had not ventured to produce the facts to which that curiosity referred. Where partial information is given and important facts withheld it is so common to speak of ungratified curiosity, and the meaning of the expression is so well understood, that I never anticipated an erroneous construction could be put upon it. With the rest of your correspondent's remarks I concur, and the alternative he puts to Mr. Hewitt seems perfectly fair.

What is the position of Mr. Hewitt in reference to this controversy? He has brought accusations of a very grave character against some unspecified individuals among our Poultry Judges, and speaks of proofs sufficient "to satisfy the most sceptical." One of these charges is that of "flagrant decisions pertinaciously adhered to."

The obvious inference from these terms is, that they refer to one or more of our Poultry Judges, who are in the habit of frequently acting in a judicial capacity, as none other would have an opportunity of "pertinaciously adhering to flagrant decisions." Now, this class of Judges is far from numerous, and some half-dozen names would complete the list. Mr. Hewitt's accusations, therefore, probably refer to one or more of a very limited number of Judges, whose names are perfectly familiar to all poultry exhibitors. Surely this is a cogent reason for making the charges specific, for even Mr. Hewitt will admit that there are some honest and upright Judges, and that it is a monstrous injustice to involve the guilty and the innocent in the same suspicion.

When Mr. Hewitt reflects that his reputation and experience as a Poultry Judge, his means of obtaining information, and the strong assertion in his letter as to the nature of the proofs which could be adduced, have given a weight and authority to these charges they would not otherwise have possessed, I think he must feel his present position is untenable, and that he must, in fact, either advance or recede. If he can establish the charges he will be entitled to the gratitude of all who take an honest interest in our Poultry Exhibitions, and if they are unfounded common justice demands that they should be withdrawn.—A NORTH COUNTRY AMATEUR.

CHICKEN SHOW AT THE CRYSTAL PALACE.

It affords us great pleasure to inform our readers that this Show will again be worthily supported. More than 500 pens of chickens are entered for competition; add to these 240 pens of pigeons and 98 of rabbits, and there will be a summer Exhibition such as we have never before seen.

The Brighton Railway Company, in a true spirit of liberality, and with a correct eye to business, will run excursion trains on the Monday and Tuesday of the Show at very low fares. This is an example worthy of imitation, and we hope the public, for whom this varied entertainment is provided, will respond liberally to it.

COCHIN-CHINA'S REMONSTRANCE.

I WISH to know, Mr. Editor, why the great Chinese variety of fowls to which I belong should be snubbed. I am rather modest in saying anything in our behalf, but I know our race are favourites with you, and I know my master would not be without us, since we provide him with so many fresh-laid eggs through the winter months, and which he could not otherwise obtain for love or money. But, Mr. Editor, is it not too bad that we should be snubbed after the buzz we made in the country four or five years ago, and sold for such high prices that we were the chief cause of what was called the poultry mania, and consequently the extension of exhibitions from one end of the country to the other? Now, I say it is too bad that we should be snubbed; for, although justice is dealt out to us at Birmingham and other large Shows by dividing us into four or five different classes according to our respective colours, yet at Bradford—yes, I say at Bradford—Cochins of all colours and Brahmas are actually knocked into one class, whilst in the same prize-list I find Game are divided into three, Hamburgs into four, Polish into two, Bantams into two, and Ducks into two classes, thereby intimating to the world that any or all of the other kinds of poultry are more worthy of patronage than we are.

[We think the remonstrant is quite right, and that the Bradford Committee are wrong. There are, or ought to be, three classes of Cochin-Chinas: 1. Buff and Cinnamon; 2. Partridge and other Browns; 3. White.]

CAPTAIN HORNBYS DORKINGS.

I QUITE agree with "W. X. W." "that promotion in the poultry ranks by purchase should not be represented as a victory achieved by competition." I am obliged to him for his courteous mention of myself, and for giving me an opportunity of explaining more clearly than "W." seems to have done the real facts of my case, in which, however, "W. X. W." is entirely mistaken.

When Mr. Wright turned over his Dorkings to me (and a very good lot they were) I told him that I thought I *could* have "beaten him with my own stock, and that, for the sake of experiment, I *would* show my best pen against his best pen." This was accordingly done at Prescott, where I showed a pen of Dorkings (with which, as chickens, I had won the Cup at Liverpool in January) against Mr. Wright's two best hens and the cock which he had formerly bought from Mr. Ulloch. The Judge awarded the first prize to my own pen, and highly commended Mr. Wright's birds.

My own adult Dorkings also took first prize at Salisbury; but I won the single cock first prize then with a cock I bought from Mr. Wright. This is indeed the only prize I have won with my purchase from him, as I understand that at Sheffield (where I won first prize with Dorking chickens) Mr. Wright's adult birds which I had sent are passed unnoticed, but I suspect this is owing to their being inclined to moult. It would be very much against my wish to "fail in justice" to Mr. Wright, who still takes a warm interest in his former birds, and I hope this explanation will convince "W. X. W." that "any victory of mine, though a friendly one, will have been obtained strictly by *competition*, and not by *purchase*."—W. W. HORNBYS.

THE HEDGEHOG A FOE TO CHICKENS.

ABOUT ten days ago one of a brood of Dorking chickens about a month old was found inside a wire pen on our lawn killed and half eaten. We baited a trap the next night with the remains of the chick, and a large hedgehog was caught, but we did not suspect him as the criminal; however, the gardener killed him. A few days after two more of the same brood were destroyed. The night before last, hearing the cries of the young poultry again, I roused a servant, who, hurrying down, found them in great alarm, and a second hedgehog decamping with a young chicken in his mouth. Is not the hedgehog usually considered to live only on roots and vegetables? I had never imagined them to be carnivorous.—H. Y.

[It is not at all extraordinary that the hedgehogs de-

stroyed your chickens, for they are known to kill leverets, frogs, snakes, and various kinds of insects, and to have driven a sitting hen from her nest to feed upon the eggs. That the hedgehog is a destroyer of pheasants' and partridges' eggs is known to most gamekeepers. It is true that White, of Selborne, records the fact that the hedgehog will eat plantain roots, and, when domesticated, which it is very easily, it will eat scraps of vegetables and bread, besides cockroaches and crickets; but it chiefly lives upon animal food.]

OUR LETTER BOX.

EXETER POULTRY SHOW.—"In your report of the Exeter Poultry Show, in the class of White-crested Black Polands, you placed Mr. Dawson first and Mr. Edwards second, instead of which I gained the first prize and Mr. Edwards the second."—GEORGE SMITH FOX.

WHITE FEATHERS IN GOLDEN HAMBURGS.—"I had seven Golden-spangled Hamburg chickens hatched eleven weeks ago, but six have white feathers on their wings more or less distinct. Is there any probability of a change to the true golden colour, or must I condemn them as spurious? They were hatched from eggs purchased from an advertiser in your columns."—E. A. S.

[It is more than probable the offending white feathers will disappear. They are common to many breeds when chickens, and they disappear when the adult plumage begins. Spanish chickens always have them, and Cochin chickens very often. We should advise you to put a dark cock to these pullets next year.]

WHITE GAME FOWLS.—"I have lately purchased a hatch of white Game fowls. I am not much acquainted with that variety. Firstly, should the hackle and saddle at any age or time of the year be a pale straw colour? Secondly, do you consider them as hardy and courageous as other Game fowls? Thirdly, would you reject a pullet with pale yellow legs?"—S. E.

[Straw-coloured feathers are very common in all white fowls. They are not desirable, neither are they a disqualification. As a rule no white fowls are as hardy as darker ones. Game may almost be deemed exceptions. They are quite as courageous. The colour of the legs is a matter of taste. Yellow are the most showy, but many consider white more pure. If you purpose breeding for white by all means reject the yellow-legged pullet.]

HEN SELF-SET.—"Perhaps some of your readers may recollect that I mentioned, through THE COTTAGE GARDENER, last September, that one of my hens had established her nest on a wall nine feet in height. She has not forgotten her old haunt, and a few days since I brought her from her elevated position with seventeen chickens, she having hatched every egg. Her first brood this year in the same place consisted of twelve. Will you kindly insert this in your paper as a confirmation of what I then asserted, viz., that hens left to their natural instinct are most prolific? Can you tell me the cause of my hens not laying? I have ten, and get but three or four eggs a day. They are fed on barley and vegetables, and have plenty of exercise."—HENBANE.

[Your hens are, perhaps, old; perhaps broody; perhaps requiring that rest to their egg system which all birds need for some period, though varying in duration.]

ROUEN DUCKS (C. L. G.).—Write to any or all of the prize-takers at recent Poultry Shows. State your wants and ask for prices.

PACKING EGGS (E. B. R.).—There is a difference of opinion as to the position in which eggs should be placed for travelling, but we can testify that we have sent eggs by rail two hundred miles, laid on their sides and packed in oats, and more than two-thirds of the eggs produced strong chickens. We have sent your other query to Mr. Brent, and will publish his answer next week.

LONDON MARKETS.—AUGUST 3RD.

COVENT GARDEN.

An excellent supply of both Fruit and Vegetables, fully equal to suit the terms of all classes of buyers, which have been numerous during this real summer weather. Importations comprise *Greengages*, *Orleans* and *Precoce de Tours* Plums, *Endive*, *Artichokes*, and *Tomatoes*; and several cargoes of *West India* Pines, sometimes 40,000 a day, have changed hands at the brokers during the past fortnight, the season for which, however, will soon be over.

POULTRY.

The hot weather and the decline of the London season have had at great effect on the market during the past week. There is a sensible diminution in the prices.

Large fowls.. 6s. 6d. to 7s. 0d. each.	Guinea Fowls 0s. 0d. to 0s. 0d. each.
Smaller do. 4s. 0d. to 5s. 0d. "	Pigeons 9d. to 10d. "
Chickens .. 2s. 6d. to 3s. 6d. "	Rabbits.... 1s. 5d. to 1s. 6d. "
Goslings 6s. to 6s. 6d. "	Wild ditto 7d. to 9d. "
Ducklings.. 3s. 3d. to 3s. 9d. "	Leverets.... 3s. 0d. to 4s. 6d. "

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—August 4, 1857.

WEEKLY CALENDAR.

D M	D W	AUGUST 11—17, 1857.	WEATHER NEAR LONDON IN 1856.									
			Barometer.	Thermo.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
11	TU	Meadow Saffron (Colchi).	29.831—29.787	87—56	S.W.	12	41 a. 4	29 a. 7	9 27	21	4 56	223
12	W	Waterwort (Elatine).	29.960—29.910	80—47	S.W.	—	42	27	9 49	☾	4 46	224
13	TH	Hornweed (Ceratophyllum).	29.959—29.888	85—50	S.	66	44	25	10 18	23	4 36	225
14	F	Spurges (Euphorbia).	29.899—29.749	75—54	S.W.	09	46	23	11 2	24	4 25	226
15	S	Mints (Mentha).	29.978—29.944	75—40	S.W.	—	47	21	morn.	25	4 14	227
16	SUN	10 SUNDAY AFTER TRINITY.	29.945—29.674	78—55	S.E.	22	49	19	0 3	26	4 2	228
17	M	Ds. KENT BORN, 1786.	29.533—29.422	70—54	N.E.	12	50	17	1 18	27	3 49	229

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 73.3°, and 51.1°, respectively. The greatest heat, 93°, occurred on the 12th, in 1843; and the lowest cold, 32°, on the 13th, in 1839. During the period 109 days were fine, and on 87 rain fell.

MR. ARCHIBALD GORRIE.

WE regret to have to record the death of Mr. ARCHIBALD GORRIE, of Annat Cottage, Perthshire, an event which took place on the 21st of July. He was born in the district of Logie Almond, Perthshire, in the year 1777, and had therefore attained the ripe old age of fourscore years. During considerably more than half a century Mr. Gorrie took a prominent part in the advancement of the horticulture and agriculture of Scotland. He was always found in the foremost ranks, and both by his pen and his example contributed to diffuse a taste for, and a knowledge of, the pursuits in which he himself took so much interest. In the earliest records of the Caledonian Horticultural Society we find his name among some of Scotland's best gardeners, most if not all of whom have now passed away. His first contribution to the Memoirs of the Society was in 1811, when he communicated a paper on "Preventing the Depredations of the Turnip Fly." In 1813 he communicated "An Account of the Orchards of the Carse of Gowrie," in which he gives a most interesting survey of the old and new orchards of that district, and many other papers of a similar character are scattered throughout the volumes. During his whole life he was more or less engaged in writing for one or other of the numerous publications that have risen and fallen, and his contributions may be found in the *Transactions of the Horticultural Society*, *Loudon's Gardener's Magazine*, *Loudon's Magazine of Natural History*, *The Prize Essays of the Highland and Agricultural Society of Scotland*, and the *Quarterly Journal of Agriculture*. Besides these he supplied the monthly Agricultural Report of the Carse of Gowrie for the *Perthshire Courier*, the *Dundee Advertiser*, and other local papers, as well as the Perthshire Agricultural Report, first for the *London Farmer's Journal*, and latterly for *Bell's Weekly Messenger*.

But Mr. Gorrie was not a mere writer. It is a fact not generally known that it was he who first brought the *Pansy*, the wild little *Love-in-Idleness*, to rank among florists' flowers. It was he who first broke the strain and launched it on its way to what it has now become. We have seen it somewhere stated that the *Pansy* was first brought into notice by "a Scotch florist," but we trust that all good florists will henceforth learn to associate with their favourite flower the name of Archibald Gorrie. More than thirty years ago it was with the greatest difficulty and in the face of strong opposition that Mr. Gorrie succeeded in getting it introduced as a florist's flower into the schedule of the Perthshire Horticultural Society, where, for the first time, it made its appearance under the name of "Violet;" and, as a small tribute to his memory, we trust some of our most eminent florists will find a seedling good enough and sufficiently distinct and permanent in its character to bear his name. He it was, also, who first introduced the once famed *Perthshire Red Potato* and the now extensively cultivated *Annat Barley*. There was scarcely any branch of country pursuits to which he did not

direct his attention, even to the raising of new fruits, in which he met with considerable success. *Lawson's Golden Gage Plum*, *Annat Park Apricot*, *Annat Beurré Pear*, *Annat Scarlet Apple*, and many others owe their origin to him.

During fifty years Mr. Gorrie acted as general manager on the estate of Annat, and for a considerable portion of that period rented the neighbouring farm of Shanry. He was well known and highly respected throughout Scotland, and we know that there are many of our readers who will receive the intelligence which we now communicate with feelings of sincere regret. It is but little more than a year since we announced the premature death of his talented son, David, and now we have to mourn the loss of the respected sire.

BEDDING FOR EFFECT IN EARLY AUTUMN.
GERANIUMS IN MASSES.—FRESH GRAVELLING.

THE first or second week in August is the earliest time at which a fashionable flower garden in the country is at its best. After all that can be done in London for the Queen and the great people, there is not a garden that I know of within miles of London which is not three times better looking just now, when there is nobody left to see it, than it was last June, when all the great patrons of gardening were in town.

Formerly the great country party looked on the London flower gardening as they did at the toy shops, either to see which most to laugh at, or for what was most suitable to please the children. As soon as London "broke up" in those days I had to bear up against my share of the breakage myself, and for weeks and months there seemed no end to it. The only consolation was that it was fresh and fresh at every turn, and more of the *materials*.

There is no such amusement now for country gardeners; the world is the same all over England now; people go up and down as they choose, and see both sides of the question; their own gardens and gardeners are not a whit better than those in London after all; the season makes all the difference. There is another class in London, however, as good and as highly connected as the country party, but they have no country seats of their own; they are fond of country gardens, and seldom see any other; and they do not see them, the gardens in the country, till they are at their best in August and September. They are, therefore, at this day as ignorant of how a flower garden is got up as the great country party were at the time alluded to at the beginning of this note; and when they happen to have a "box" near London they almost tease their gardeners to death about the flower garden, because their beds are not in bloom and as full of plants the day they are planted as those they see in the country at this season of the year.

If it be true that "there is a medium in all things," a middle course, here is the place for it in gardening. On good ground and in all low situations in the country the gardener plants out his bedding plants wider apart than is done in dry situations, in order that they may have more room to grow out "their pride" before the autumn, when they are expected to be one blaze of bloom. This, however, is not a "medium," but only one end of a story. Well, the other end is in London; and here, on the stiff clays of Middlesex, or on the low grounds on either side of London or of the Thames, if gardeners plant the beds as they would do and should do in the country in similar situations, they would hardly have a fair bloom or covered surface till the London season was over; and, on the other hand, if they plant hereabouts so thickly as in the country the plants will look well till about this time, and then "they go to leaf," and the flower-beds are not worth looking at unless they are on gravel, chalk, or very sandy soil.

It is not easy to strike a medium between thick and thin planting, or between all bloom in June and all leaves in September, so much depends on the situation and on the kind of season, supposing the stock of plants to be the same.

One need never be afraid of planting too thickly on very poor sandy soil, nor on chalk, even if the beds are of rich compost; but to insist on planting beds near London so thickly at first as they are now seen in most places in the country would only be insisting on their ruin in the autumn, and deprive those who stop at home, or who come home in September, of the best part of the season for enjoying the flower garden.

There is a very common custom among visitors to country gardens in the autumn which leads to disappointment in nine cases out of ten. It is this: they see some bedding plant which does better there than all the rest of that kind, and they must have cuttings of it. Next year or the year following they make a bed of it in the best part of the garden, and ten to one if it does not fail; the place is either too damp or too low for it, or it is altogether too dry for it, or the soil does not suit it as it did where they used so much of it. But there is hardly a good garden now-a-days without an experimental border, a mixed border where all sorts of plants may be planted in the mixed style, and it is on this border that all new or old plants should first be tried. I would never risk a bed in a good situation with a plant that was new to the place, however well it might have looked at Lord Broadacre's, "where we were staying last autumn." My own seedling *Punch* deceived hundreds who went through this routine. I received a good supply of the true *Punch* in May from Mr. Kinghorn, of Richmond, where I saw it last autumn, and it turns out the third best bed in the Experimental Garden, or the second best according to some tastes. Mr. Fleming's *New Trentham Scarlet* is the richest bedder of all the 200 kinds of scarlet Geraniums we could muster in this garden. *Miller's Nosegay* is the gayest, and *Punch* the next richest after the *New Trentham Scarlet*. We have not a sufficient quantity of the *Richmond Gem* yet, but next year it will be put in the place of honour, a number one bed. We planted a little bed of *Baron Hugel* and another of *Harkaway* to see their effect on their own bottom; that is to say, without the effect being caused by a combination of kinds where these two would come in for edgings, and I must say of them both that they do not look so well as they do round other beds. The only place where I would use them again singly would be in those little intricate designs one often sees for terrace gardens, where little angular or curious-shaped beds must necessarily come in to fill the pattern. The *Baron* and *Harkaway* could there be managed as easily as the *Variegated Dandy*, the Gooseberry-leaf Geranium, and

such-like. Another very old kind, called *Lucidum*, is capital for such beds. I had it true last year in a letter from Mr. Sims, of the Foot's Cray Nursery, Kent, before which I thought it was lost. It is like *Shrubland Pet*. Everybody thinks he has it, there being several kinds so much like it that it is difficult to make out the difference unless one is well acquainted with it. I never had it true at Shrubland Park after getting the name from all quarters I could think of. It is the only one of that race which will give good seedlings, and breeders who are curious about sections or races should possess it to work on.

There is a world of show and interest for the flower garden to be yet discovered among obscure Geraniums and mere weeds of that family. Who was the father of *Harkaway* for instance? Any good breeder can tell the mother, but I question if there are many breeders who could even guess who was or whence the father came; and why should we not have a *Harkaway* in every one of the shades which are found in the family? Are we ever likely to have a real shaded bed of Geraniums such as THE COTTAGE GARDENER has been talking about since he left off running "on all fours?" This question sticks in the doorway of all the best gardens in England; at least, in the doors of the largest ones. We must have compassion on smaller gardens, however, for really there is no room but for the good style of plain dressing; but what would become of trade if all dressed alike, and were, like Abdallah's Franks, looking just as if their dresses were stitched on them?

There are green Roses now, and green Petunias—new dyes by the hand of Nature; and Mr. Fortune speaks in his last book of an entirely new kind of artificial green he saw in China, and all of us must be content to be as green as any of them till we can dress a bed in six or seven kinds of tints and shades blending beautifully and imperceptibly.

There is one way of heightening the beauty of a flower garden even when it is at its best point, as at present, and those who can afford it and are aware of the move seldom fail to practise it, especially if large parties are expected to visit about that time. When the beds are on gravel the thing is more telling after the edgings and everything are trimmed about the beds; the walks are fresh painted, as it were, with the finest gravel, and rolled to a smooth, glossy surface. This can be done in the hottest and driest weather if the walks are well watered first, then sprinkled over with gravel, the roller following immediately. There is nothing that I know of which pays better than this, and now that everything is at the height of its beauty this fresh gloss to the walks is just as telling as new painting or papering to the drawing-room, or new trimmings to a bonnet.

D. BEATON.

SHORT CULTURAL NOTES FOR WINDOW GARDENERS.

(Continued from page 262.)

CARNATIONS OF THE TREE KIND bloom freely in an airy window in winter and spring. Strike cuttings in spring in a pot under a square of glass, and pot off when struck, or obtain young plants in May. In either case pinch out the point of the young plant, and place it in good soil out of doors, watering it well when necessary, and repot in September, or keep repotting the plant, keeping it, if possible, on the balcony or out of doors in summer. We prefer planting out and lifting and repotting when practicable. We have tried *Anne Boleyn* Pink and others in the same way, and with fair success. The pinching out the point of the shoot prevents flowering, and encourages the growth of flowering shoots in autumn.

CHRYSANTHEMUM INDICUM.—The Pomponé varieties are the most suitable for windows, and dividing the plants or suckers

in April or May is the easiest mode for windows and balconies. When done flowering keep the plants rather dry in any sheltered place where they will not be exposed to severe frost. If the pots are plunged in ashes, the surface covered with litter, and evergreen branches stuck among them, they will generally be safe enough. Use light, rich soil and plenty of water after they begin to grow. If you want some very dwarf flowering plants layer the points of shoots in small pots at the end of August or the beginning of September.

CINERARIA.—Sow in spring for early winter blooming; sow in summer for spring-blooming plants. Good sorts, when done flowering, should be planted out, and during summer and autumn should be divided, or their suckers, like young plants, potted separately in small pots, and repotted as necessary. Freedom from frost, plenty of air, and coolness are the essentials for healthy growth. The slightest appearance of green fly must be attacked at once.

CLINTONIA ELEGANS.—A pretty annual for a pot or for hanging over the side of a neat vase. Sow under a pane of glass in April, transplant, and in common soil it will do inside or outside of the window, but best in the latter.

COLLINSIA BICOLOR.—In a cool room fine plants of this may be obtained in April and May by sowing in September, and keeping afterwards with a little protection until spring.

CONVOLVULUS MAJOR.—Fine for running up the outsides of windows, and flowering beautifully until cut down by frost. Sow in light, rich soil in May where it is intended to stand.

CORONILLA GLAUCA, and especially *variegata*, are nice winter ornaments, yielding a profusion of yellow flowers, and liking rather a free loamy soil. It should be somewhat freely pruned when done flowering, kept in the house until the second week of May, then placed in a protected situation out of doors, and well watered and syringed during summer, placing it indoors in October.

COTYLEDONS.—A few of these may be introduced by those who love succulents. They delight in sandy loam and a little old lime mortar; they will take a little water in summer, but will next to dispense with it in winter, the leaves absorbing as much as they perspire. Any place free from frost and with a fair portion of light will suit them in winter.

CRASSULA COCCINEA.—This is deservedly a favourite succulent, and the beginner may well be proud who blooms the same plant every year. This can only be done by having a succession of shoots, for what will bloom next year must have been grown and ripened this year. Like all other succulents it is easily propagated. Stick a shoot into loose, sandy, gravelly soil, and it is sure to root. Here, then, is a nice little plant with two shoots, one of which shows bloom in June, and the other not. Cut down the flowerless one at once to within an inch or so of its base. It will soon show a number of shoots, and you must thin them to three or four. Meantime the plant will want water to expand the blooms, and that will also meet the wants of the young shoots. When done flowering that shoot may also be cut down, and thus your succession is complete. Continue watering, giving a full exposure to the sun for a short time afterwards, until the young shoots from the first main shoot cut down are some size; then gradually refrain from watering, but give every possible ray of sunshine in autumn. Continue the same course in winter, only next thing to locking up the water-can, and just keep the plants from getting often below 40°, and never below 32°. As the sun gains power the shoots will lengthen and begin to bloom, and you must just repeat the same course, cutting down the shoots that have flowered, and giving every encouragement in growing and ripening to the others.

CYCLAMENS.—Who does not love them? And yet how seldom are they to be seen! Suppose you had a plant nicely in bloom this spring, water it as long as it is in bloom, and while the leaves are green. As soon as they begin to show a yellow tinge refrain from watering, first gradually, and then altogether. When quite withered remove all decayed foliage, and place the pots in a sheltered situation out of doors, turning them on their sides so as to exclude rain, and yet allowing them to absorb enough from the ground not to be dust dry. In winter take them indoors, and as soon as the corms begin to push examine the drainage, top dress or repot, and give a little water, increasing the quantity by degrees: other things being equal, they do best in smallish

pots. A four-inch pot will grow a lovely little plant. If you wish to raise seedlings look after the seed-pod, which bends down to the soil, and sow as soon as the seeds are ripe.

CYTISUS ATTLEANA.—This little bush is the best of the group for a window, and may be a mass of yellow all the winter and spring, and not more than one foot in height. With the exception of a greater dredging from the syringe in summer treat it like the *Coronilla*.

DIELYTRA SPECTABILIS.—For border, window, forcing house, and greenhouse this is alike valuable. A six or seven-inch pot would grow a fine specimen for a window. When done flowering set it out of doors in a sheltered place. In a week or two remove it to one more sunny, give water as long as the leaves are green, then refrain, but just see that the soil is not greatly dried. In winter merely protect the pot from frost. As soon as fresh vegetation commences place it in the window, after examining the drainage and fresh surfacing with rich material. As it grows and blooms increase the water as it wants it. Any rich sandy loam will suit it.

DEUTZIA GRACILIS.—A neat, compact little shrub, with pretty white flowers. When done flowering prune out the flowering shoots, so as to increase the growth of others; fresh pot if necessary; put it out of doors in an open place, defending the pot from the rays of the sun; give water as needed; protect from frost in winter, though a few degrees will not harm it, and soon after you place the plant in the window in spring you will have a myriad of white flowers.

DAPHNE INDICA AND ODORA.—I once saw a fine plant of this in a parlour, where it had been an acceptable visitant for years. It was kept in winter in a light room over a stable, the heat from which and the window shutters prevented injury by frost. When the flower-buds showed in the spring it was taken to the parlour. When finished blooming it was taken back to the room above the stable, syringed, and kept rather close there by giving little air to encourage growth. By July and August it got a protected site out of doors, where the sun shone on it chiefly in the mornings or afternoons, and by October it was housed. Heath soil and loam suit them best. When resting in winter do not soak with water.

DIOSMA ERICOIDES.—The white flowers of this Heath-like plant are small, but many like the fine perfume of the foliage, and it will stand roughish treatment in a window. Prune a little when done blooming, to keep the plant in size and shape; keep in the window a few weeks afterwards; then place out of doors in July or so; give it a shady place at first, and then one more open; defend the pot from the sun, and house in October. Heath soil and sandy loam suit it.

ECHEVERIAS, such as *rosea*, *gibbiflora*, and *coccinea*, are interesting among other succulents. Treat as for Cotyledon or Crassula. They are easily managed if not over watered, and may be dry in summer even, yet suffer little injury.

EPIPHYLLUM TRUNCATUM is, perhaps, the best of this group of Cacti, and requires rather more heat when growing than a window generally gives. I have seen it do, however, very well in the windows of amateurs. One thing in its favour is its early blooming, from the new year and onwards in the spring. When done flowering it can, therefore, have the sunniest spot in the window to encourage growth, and by the middle of July it should be set in the sunniest spot out of doors, and no more water given than will prevent the succulent shoots shrivelling. In winter, also, keep it dry until it shows flower-buds, then sponge the stems, and water at the roots moderately with water from 60° to 70°. Similar soil to the other succulents mentioned will suit it. It looks best grafted from one to two feet high on a strong shoot of *Cereus speciosissimus*. Cut off the top of the stock, make a split in it, in that insert a shoot of *truncatum*, with the bark removed a little from each side of one end in the shape of a wedge, stick a small wooden pin through to keep them in their place, bind loosely with matting, tie a little damp moss round, shade with a leaf or a piece of paper, and in a few days the union is completely effected.

ERYTHRINA CRISTA-GALLI.—This will only do for a large window. When done flowering set the plant in a sheltered place out of doors; in a week or so put it full in the sun, and give water until the leaves get a yellow tinge in autumn; then let the plant get dryish; cut down to the base of the

shoots; house in a stable, or anywhere where frost will not harm the root in winter. In spring, when the buds begin to break, move the pot into the light, that the young shoots may come strong; pick out the surface of the soil, and replace with rich loam and rotten dung; water as required, which will be freely when growing and flowering, and thin out the shoots to three or four, according to the strength of the stool and roots. With the exception of ripening the shoots in autumn before pruning back, and keeping dryish and protected from frost in winter, treat the plant as you would a Willow stool. Sandy loam and rotten dung will grow it well. The young shoots when three inches long from the stool are the best for propagating under a bellglass.

FUCHSIA.—What shall I say, in a few words, of this queen of window plants, of all the outs and ins of which a little volume might be filled? Here is a nice plant, thirty inches high, in a six-inch pot, and large enough for a window in general. How beautiful it looks! How brightly sparkled your eyes when, after her admirings, you could present a smaller plant of the real Simon Pure, raised by yourself this spring, to your sweet cousin Alice—all the sweeter because she enters so sympathisingly into all your doings, doubts, and disappointments, as well as successes! Ah! we know all about it; but we never tell such secrets. Well, treat the plant kindly; give it water just as fast as it drinks it, and says by its appearance, "I want a little more." Give all the air you can, that the sweet thing may breathe the pure breezes that Heaven in mercy wafts to every living thing. By and by the flowers will fall, and fail to be succeeded by others. A few of the leaves will droop, and others will obtain a yellow tinge; then gradually lessen waterings, and before long, as the beauty declines, place the plant out of doors, at first slightly protected, and then full in the sun. The more sun-browned the shoots are the better for your prospects next year. Take means to throw off the heavy autumn rains, so that the roots shall not be soaked whilst most of the leaves have fallen. By the first week in November or the last in October, at any rate before the plant has tasted more than a degree or two of frost, prune back a little the straggling branches, and remove the pots to their winter quarters. Anywhere will do where the soil is kept dryish, but not dust dry, where frost is excluded, and where coolness is so far secured that fresh growth will not take place. No situation is better than the floor of a cool cellar, for there the roots will absorb a sufficiency of moisture without any necessity of watering. In March they will begin to bud, and may then want a more regular pruning. Young shoots then and in April two or three inches in length, taken off close to the older wood, will strike freely under a bellglass, and if potted off will make nice little plants for autumn flowering. The older plants may be shifted a little before the shoots are that length, merely shaking most of the old soil away, plunging the roots in a pail of water of about 60°, repotting in a clean similar-sized pot in fresh fibry loam and leaf mould, syringing the tops, shading to prevent excess of evaporation, and giving but little water at the roots until they are working in the new soil, which, when used, ought to be in a medium state, neither wet nor dry. The sorts best suited for windows are dark flowers—*Globosa*, *Vanguard*, *Voltigeur*, *Diadem*; light flowers—*Pearl of England*, *Prince Arthur*, *Duchess of Lancaster*, *Clio*.

R. FISH.

FLORISTS' FLOWERS

DURING AUGUST AND SEPTEMBER.

ANTIRRHINUM.—*Saving Seed.*—The plants of last year's propagating will now be in flower. Should any seedlings prove superior to the old varieties they should be numbered, and opposite a corresponding number in the garden book a full description given of the size, form, and colours. Then from these superior flowers save seeds, choosing the most perfect blooms for that purpose. I am confident there is much improvement yet to be made in this class of flowers. Seedlings should now be transplanted into beds in an open part of the garden. The bed should be slightly enriched with dung, and raised in the centre to throw off the wet in winter.

Remember this plant is one that lives longest on a dry wall. Hence the ground should, if possible, be of a dry nature.

Cuttings of choice varieties may yet be put in; short cuttings are the surest to strike. They may either be put in the open ground under handglasses, or planted in pots in sand under a glass frame. Plants going out of bloom, and where seed is not required, will bloom again late in the autumn if the old spikes are cut off as soon as the major part of the flowers has fallen.

TWELVE SELECT VARIETIES THAT ARE WORTH GROWING.

Alma.—Yellow, with large red stripes.

Anacreon.—Deep carmine, spotted with white.

Blood Royal.—Tube pure white, sepals rich crimson.

Conqueror.—Rich yellow, with crimson flakes, carnation-like.

Innocenza.—Pure white; suitable for a bed.

John Edwards.—Tube and mouth white; sepals rosy crimson, blotched with white; distinct and showy.

Meteor.—Dark fiery crimson self.

Primrose Perfection.—Very distinct, a free bloomer, colour a pleasing clear primrose; good for bedding.

Princess Alice.—Pure white, very large and fine.

Sir Edmund Lyons.—Tube pure white, sepals deep purple crimson; a fine variety.

Sulphureum.—White tube, with sulphur-coloured sepals; lower lip veined with purplish crimson; large flowers and good habit.

Village Maid.—Tube and mouth pure white, petals rosy lilac; beautifully distinct.

AURICULAS.—These lovely spring flowers are not half so much grown as they were when I was a boy forty years ago, and what is the reason it is somewhat difficult to clearly prove. My idea is that since then there have come into culture many other beautiful flowers that rank under that convenient title, "florists' flowers;" such, for instance, as *Calceolarias*, *Chrysanthemums*, *Dahlias*, *Pelargoniums*, *Hollyhocks*, *Pansies*, *Petunias*, *Verbenas*, and some others. And I do not find fault with this state of things. The greater the number of florists' flowers, the greater the pleasure of the cultivator. Every month from April to October brings his favourites into bloom to gratify his senses, draw him from debasing pursuits, and gradually implant in his mind discriminating power and a love of the beautiful—ideas that must have a tendency to render him a kinder and a better man in all the relations of life.

At this season of the year Auriculas should be repotted if not already done. Old, full-grown plants should have all the old earth carefully shaken out from amongst the roots; then examine the main, thick, long root, and if the lower end is decayed or diseased cut it back to where it is perfectly sound, and close to some healthy fibres; rub a little gum over the wound, and then repot the plant in fresh compost. As some of our readers may not know the best compost for the Auricula I will describe it:—Good turfy loam from an upland pasture, two barrow-loads; leaf mould, half a barrow-load; and two-year-old, thoroughly decomposed cowdung, half a barrow-load. Mix the whole well together, and then add a peck of sharp river sand. Smaller quantities to be mixed in the same proportions. Some florists use nauseous mixtures of blood, night soil, sugar-bakers scum, &c., but I have no faith in them; and, besides that, they recommend such a long course of preparation and so many turnings over that the enriching qualities of these extra rich manures are evaporated.

Supposing the amateur to be in possession of the materials I have recommended, he need not fear that his plants will not grow strongly, and produce good stout flower-stems and well-formed blooms next year. Use clean pots, and drain well with broken potsherds; then

place some of the rougher particles of the compost upon the drainage, a thin layer of soil upon that, and hold the plant in one hand in the centre of the pot, spreading out the lowest fibres, and throwing in gently some more soil; then spread out the next tier of fibres, and cover them, and so proceed till the pot is full. Contrive it so that the leaves may stand clear out of the compost when the pot is full; then shake down by smartly striking the pot upon the bench three or four times, leaving it rather light than hard pressed, and so proceed till all the full-grown plants are finished. Younger plants need not have all the old ball shaken off, but if they are healthy and evidently want larger pots let them have larger ones, only observe this—not to exceed, even for the largest plants, pots more than from five to seven inches in diameter. For a fortnight or three weeks after potting let the plants have a slight shade from the sun, and do not water heavily; in fact, wet the leaves as little as possible, or the older ones will certainly damp off, and may even rot the main stem also. A good aspect for the Auricula till the end of September is one facing the morning sun. Put plenty of ashes under the pots to keep down worms, and look out diligently for slugs. With these attentions closely applied the Auricula may be grown as well as any other plant.

CALCEOLARIAS FOR POTS.—The herbaceous varieties should always be treated as annuals; in fact, they are nothing else. As a proof let me ask where are the named varieties that were sold by nurserymen three or four years ago? Dead and forgotten. Let the amateur, then, always depend only on his seedlings. The best time to sow the seed is the beginning of June, but it may be sown successfully to the middle of August; in fact, two or three sowings at different times give the advantage of a longer season of bloom. Seedlings now up should be pricked out in pans or boxes, and placed close to the glass in a cool frame. In a month they will be fit to be transplanted into three-inch pots and replaced in the frame. By the end of September they should be large enough to require repotting into 4½-inch pots. In these they may remain on a shelf in the greenhouse all the winter. Later seedlings may be kept in the smaller pots through winter, and the last sowing would be as well in the boxes they have been transplanted into through the same season.

The Calceolaria, like the Cineraria, is very subject to the attacks of the green fly. The plants should, in consequence, be frequently fumigated with tobacco; but great care must be bestowed in applying this smoke, or the leaves will get scorched.

SHRUBBY CALCEOLARIAS.—If we could by hybridising throw the bright colours and well-formed flowers of the herbaceous varieties into the shrubby ones, the former would never be cultivated. I see some progress towards this desirable consummation; but I cannot as yet recommend any by name. I know several will be sent out next year greatly improved above any at present known.

It is a good time now to put in cuttings of these shrubby varieties. They quickly strike root, and may either remain in the pots on a high shelf in the greenhouse, or may have one shift into three-inch pots. Where there is plenty of room I should prefer the latter practice.

CARNATIONS AND PICOTEES.—These kindred races require exactly similar treatment. They may yet be layered successfully. A question rises in my mind, Need I describe this operation? Certainly some of our readers may not know how to perform it. Those that do will, I am sure, excuse me informing the young tyro how to perform this sure method of increasing his favourites. First, then, procure a sufficient number of hooked pegs. The common Braken or Fern makes as good as any other, though small branches of hazel, birch,

or beech made into hooks answer quite as well. Also make ready some finely-sifted, light soil, and sharpen a good knife; then take hold of one of the young shoots, trim off neatly the lowest leaves till there is about an inch and a half of stem so denuded, and make a sloping-upwards incision half way through the stem. This must be done with a steady, firm hand, or the knife will go right through. As soon as the slit is made place a small piece of wood in it to keep it open. Proceed then to the next, and so on all round the plants. When all are done take a peg and hook down the first layer, then the next, and so on, placing them as nearly as possible at equal distances. Finish with a covering of the sifted soil, and then give a good watering. You ought to succeed in nine cases out of ten, or even ninety-nine out of a hundred. They will be all the better if a good watering is given two or three times a week to facilitate the rooting process.

Perpetual Carnations to bloom in winter should now have a free potting, and should be well tied out to form bushy plants. A weak solution of manure water three times a week will encourage free growth. No flowers ought to be allowed now. The grand object is to reserve the strength for the winter bloom.

T. APPLEBY.

(To be continued.)

FOOD FOR RABBITS.

In this communication I shall dwell principally on the food, as it is one of the most important points in the management of Rabbits. I will detail the feeds I give mine in a day. I have now sixteen does, three bucks, and about thirty-five young ones.

8.30 a.m., greens, fresh gathered, with the dew on if possible, and mixed oats and bran; 1.30 p.m., more greens and a little hay or clover hay; 5.30 p.m., the same as at 8.30 a.m. Now, I know several amateurs, when looking at this, will say that I give too much greens; but not so. You will find that I give plenty of dry food, and I always consider that, so long as Rabbits have plenty of this, the greens will never do them harm.

Again, several will say that wet or damp food is bad. In one book on Rabbits which I have it says, "Wet or damp food is deadly poison to them." Now, I have for the last three years fed mine on greens cut out of my garden with the dew on them, and consequently quite wet; yet I have never lost a Rabbit by disease, and my Rabbits are always healthy.

Whilst I am speaking of greens let me tell all Rabbit fanciers that chicory is the best food you can give them. The seed may be bought from nearly all seedsmen. I not long ago purchased 6 lbs. at 1s. 4d. per pound. It will serve all my Rabbits, or nearly so, this season. It grows very much in the leaf like the dandelion. It was recommended to me by a gentleman who kept Rabbits for twenty-five years, and he says that he found it the best green food that could be given them. It grows very large, and you may cut it half a dozen times a year if you like.

I noticed that some of the Rabbits in the Sheffield Show looked as though a little more green food would not do them much harm; others of them were very fine.

In my next I will say a word or two on the size, shape, and colour that I think Rabbits for exhibition should possess. —AN AMATEUR.

QUERIES AND ANSWERS.

RARE BRITISH PLANTS.

"I saw, in a late number of THE COTTAGE GARDENER, that the *grey Primrose*, or rather, Oxlip or Polyanthus, is now a rare plant. As I have one that I can spare I will willingly exchange it for a strong plant of *Cornus Suecica* (of which I am much in want), besides paying the person who may procure me the *Cornus* the price of the plant, and indemnifying him for any trouble or expense that he may

be at in procuring it. I am also much in want of some bulbs of the *true Leucojum autumnale*. The bulbs of this plant are not larger than peas, and the leaves are not broader than those of a fine Grass.

"In reading your most interesting little treatise upon Ferns I find that *Ceterach officinarum* is spoken of as a plant of difficult cultivation. I have had it and propagated it by divisions for perhaps twenty-five years, and have never found any difficulty in keeping or propagating it. I plant it in small pots with sandy peat. I found it growing upon the church of Wickham Breux, a village a little way out of the road from Canterbury to Sandwich, about five miles from the former place, and eight miles from the latter. If I remember rightly the Fern grew abundantly upon the church; but, as churches are happily at the present day kept in better order than they were a quarter of a century ago, it is not improbable that the Fern has disappeared from the church."—REV. EDWARD SIMONS, *Ovington, Walton, Norfolk*.

[The berries of the pretty little Alpine plant, *Cornus Suecica*, were among the first "fruit" that we ever tasted, and we played our "pranks" amidst acres of it, with *Trientalis Europæa*, *Parnassia palustris*, *Pinguiculas*, *Droseras*, and other mountain and marshy tinyworts; but, without going down and hiring some shooting grounds in the Highlands, we know not how to get at these little gems in quantity. *Cornus Suecica* is one of the most difficult of our British plants to keep. It should be grown in soft, spongy peat, and completely in the shade under some low bushes. It is always best fruited where the Heather is long enough to cover a body's hurdies. *Leucojum autumnale* is also a difficult little bulb to keep. Dry, sandy loam, and a very dry, sunny place to grow in, and not to be disturbed, suit it best. The leaves are so grassy that their own weight bends them about into wavy shapes. We last saw it in the Pine Apple Place Nursery.]

BEDDING PLANTS.

"Pray tell us as soon as possible what is the real name of the blue bedding plant spoken so highly of by your correspondent, Mr. Thompson, for a really good blue bedding plant is just what we are all sighing for.

"A good white bed is, I think, less difficult to obtain, as we shall now have the *White Zelinda* Dahlia, and as you say there are several white Geraniums even better than *Hendersonii*; and there are also in existence new double white Petunias as well as double purple, which, judging from their habits, are almost certain to make excellent bedding plants, and for a dwarf white bed nothing can surpass *Verbena Mrs. Holford*: she will assuredly drive all other white Verbenas from the parterre.

"*Perilla Nankinensis* is certainly not more hardy than the Heliotrope, but it is still one of the most effective and useful annuals that has ever been introduced.

"I can hardly conceive *Petunia Imperialis* making a good bed, as, if it does flower in the open air at all, the flower is certainly not white."—W. O.

[Will "W. O." first "tell us" how any one is to know what another one means unless that other tells his meaning himself? Perhaps Mr. Thompson will kindly help us to the name of his blue-flowered bedder.

We must not be too sanguine about the *White Zelinda* or the double Petunias, but *Mrs. Holford* is just as you say, and always was; but other mistresses grow old and make way for young ones, and why not *Mrs. Holford*? We have seen *Perilla Nankinensis* very effective in a row behind a row of dwarf scarlet Geraniums, and behind a row of dwarf yellow Calceolarias. Is this the effectiveness you mean?]

FERTILISING CUCUMBERS.

"What is the cause of my Cucumbers not coming to maturity? They are very fruitful, but the fruit does not run out above as long as your finger, and then it makes a stand. I have not had more, I think, than four fine fruits this season, varying from sixteen inches to twenty-three inches, the shortest being sixteen inches and the longest twenty-three inches, and very thick in proportion. It bears the

name of *Mona Cottage*. The one plant has filled my frame, measuring ten feet long and five feet wide, and looks uncommonly healthy. I have topped it rather severely, and the dung has become cold; and I give it a bountiful supply of liquid manure, or rather, sheep-dung and water, but I give it quite clear. I do not exactly understand the art of fertilising Cucumbers, though I have frequently seen it, and heard that they will grow as fine without fertilising as with. If you will make me acquainted with that art I shall feel it very much a favour bestowed upon me. I have to say that I never saw fewer male blossoms on a plant before, and though every joint throws out a fruit, still it does not thrive or come to perfection. I give plenty of fresh air by day and close up at night. Would a little bottom heat do supplied by a hot-water tank? I should very much like to be made acquainted with the best mode of fertilising. My mode has been merely to take the male blossom off and push it into the blossom on the fruit."—F. S., A FRIEND.

[If your male flower is dry, well supplied with pollen dust, and the female blossom is also dry, there is nothing more required than what you seem to have done to secure fecundation, unless it would be as well that the sun were shining at the time. This process is necessary to secure seeds, but not at all to secure good fine-shaped Cucumbers. We are old-fashioned enough to prefer young crisp Cucumbers from eight inches to twelve inches in length, though we have grown them above two feet and like gun-barrels when we wanted. You seem to have an excess of luxuriance. See what Mr. Fish said lately on curtailing root action. This luxuriance is one reason why the fruit does not swell; another is that you leave too many on the vine. Try thinning them out so as to leave half a dozen or so in a light at one time. Your soaking might be right or wrong according to circumstances; but if the heat was gone we should only have watered so when the bed was very dry, and we should have heated the water to 80°. A little bottom heat by tank or dung lining would no doubt assist you, and so, after that, would a little air left on at night. We do not know the kind, and that, too, may be against you, for some very large kinds are poor bearers.]

STOPPING VINES IN POTS.

"This year I have been growing a few Vines from buds in pots, and this morning, on 'stopping' the laterals on the said Vines, I found a few like the inclosed. Is it uncommon? Can I perceive the fruit bunch on it or not? The fruit-buds for next year are as 'plump' as you like, not one making a 'start,' or likely to. The plants are seven feet high, and most of them have been stopped a month. I did not want them higher, so I stopped them for 'concentration.' Was I right in so doing? I want them to fruit next year from three feet upwards. Would my taking out the under buds tend to strengthen those above?"—HOPEFUL.

[We think your Vines must be in a good state from the laterals being so fruitful as to show several incipient bunches of fruit. You had better let a number of the laterals grow a little longer to avoid starting your primary buds. You are taking a rather singular mode in fruiting your rods about three feet from the base. As you want no fruiting shoots below that height we cannot see how you would do any harm in picking out the buds now, and thus you may concentrate more organisable matter in the stem above as well as below; yet we do not see clearly how that could be effected in a manner quite analogous to the case mentioned in Mr. Fish's essay to which you refer.]

CAMELLIAS DONE FLOWERING.

"I have some very fine Camellias, and they are placed completely in the shade, where they have done well until the last fortnight, when yellow leaves became very apparent. Might they not be placed in a sunny aspect? There are many directions in your valuable work, but this distinction of sun and shade does not appear to me to be dwelt upon."—AN ADMIRER OF YOUR WORK.

[Most gardeners prefer a somewhat shady place for their Camellias out of doors, as a fierce sun browns, if it does not otherwise injure, their leaves. A situation against an east wall is very good, and where the full force of even the morning sun does not strike them. What a plant will bear while exposed to one continuous mode of culture, and what is desirable when under glass above litter, and in the open air again, are different things. The yellowing and parting with some of its leaves in summer are as natural for a Camellia as for a Laurel or other evergreen—one of the things, in fact, that make evergreens troublesome in fine-dressed grounds in summer.]

RAISING VERBENAS FROM SEED.—CLINTONIA PULCHELLA AS A VASE PLANT.

“ ‘W. W.,’ an amateur gardener, thinks of planting several large beds of Verbenas next year, and would prefer raising his plants from seed if convenient. He would therefore feel obliged if you can inform him whether there would be any difficulty in so doing by means of an ordinary hotbed (he has no greenhouse), in the same way as other half-hardy things, such as *Linum grandiflorum verum*, *Salpiglossis*, &c. Not hearing of any of his neighbours being in the habit of obtaining plants by this means he is under the impression that there may, perhaps, be some particular difficulty in accomplishing this that he is not aware of.

“In a recent number you have an article on plants suitable for culture in vases, and I perceive you omit one very beautiful plant from the list of likely subjects, the *Clintonia pulchella*. The writer has tried it successfully, and he never saw any vase such a mass of beautiful bloom, and so close to the surface is it that the wind has very little effect upon it. He used rich soil and plenty of water.”

[There is no difficulty in raising Verbenas from seed provided you can obtain it good. As you have a frame you should make up a gentle hotbed about the end of February, and as soon as the heat is sweet and moderate you may sow the seeds of your Verbenas either in pots or shallow seed-pans. When the seedlings come up you should prick them out in pans or shallow boxes, and gradually inure them to bear the open air. Towards the middle of May you may plant them out in your large beds. Of course, you are aware that your beds will have all the colours of the rainbow (excepting, probably, yellow), and will therefore be all alike in that respect. One thing is possible—you may obtain some new and improved varieties, otherwise we think your beds will not be very interesting.

No doubt the *Clintonia pulchella* would be a good addition to our list of plants for vases; but it requires to be raised first in a hotbed, which everybody does not possess. We are obliged, however, by your notice of it, and should be glad if all our correspondents would furnish us with similar information.]

WHITE BEDDING PLANT.

“In THE COTTAGE GARDENER, page 253, James Thompson asks for the best white bedding plant. In reply I have found that the best for a white bed is the double *Pyrethrum*, or *Feverfew*. Mine makes a bed as white as snow, and the plant is easy to grow, needing no protection in winter. Leave it in the bed, and it will come up as thickly and bloom as early as anything we have for a bed, and it will last until frost comes. I think this plant ought to be more grown than it is for a white bed. I have not seen anything to equal it yet. It grows one foot high, and mine is as double as the best Pomponé *Chrysanthemum* we have.”—HUGH HOWARD.

[You are quite right; the same plant, under various names, has often been recommended in these pages.]

EVERGREEN HANGING PLANTS FOR GREEN-HOUSES.

“Will you give me the names of six evergreen plants suitable for growing in baskets hung from the roof of a greenhouse during winter? Those that will hang down say about a foot will be preferred.”—PAT.

[*Podolobium scandens*, yellow.
Hibbertia grossulariaefolia, yellow.
Sollya heterophylla, blue.
Kennedya rubicunda, brownish red.
 „ *prostrata*, red and purple.
Billardiera longiflora, crimson.
 The above are nice plants that will not grow over strong. For commoner things that will show well in winter and spring, and grow from eighteen inches to some feet in length, we would select such as the following:—
Hibbertia grossulariaefolia.
Saxifraga sarmentosa.
Maurandya Barclayana.
 „ *semperflorens*.
Lobelia speciosa, old species.
 „ *bellidifolia*.]

CLIMBERS FOR A COOL CONSERVATORY.

“Having a tolerably lofty conservatory, say about thirty feet to the ridge of the roof, I am anxious to grow some plants, chiefly in pots or tubs, which shall run up very rapidly. Would you kindly mention the names of a few? I wish them to be hardy conservatory plants; that is, such as will bear uninjured a degree or two of frost if it should accidentally get in; for sometimes the weather will change in the night, and be frosty when there was no appearance of it the preceding evening, and consequently no fire made on that evening; and then how terribly mortifying to find plants grown up into trees with great care and attention cut down at once. I wish for none of these, as I know there are plenty of desirable ones which will pass unhurt through such an ordeal. I want chiefly evergreen shrubs, bearing either a very showy or a very sweet-scented flower. I have Oranges, Lemons, Camellias, Myrtles, Azaleas, Brugmansias, Chimonanthuses, Wistarias, and *Jasminum grandifolium*, a large leaf and very small flower. Be so good as to name some more of the sweet-scented Jasmines that will suit such a house, and Honeysuckles or Loniceras, &c.

“After that please give me a list of quite hardy plants which, growing in pots, will flower early in the conservatory, and will make a cheerful appearance or emit an agreeable fragrance. I shall be obliged, also, if you will state in what way the *Eugenia Ugni* should be kept from October to March, having forcing houses, but no stove, or any pit or house where the temperature is kept up in winter except just to keep out frost; the same with regard to the *Guava*.

“Are there any very desirable stove plants which could be kept during winter in a window in a room where there is a constant fire day and night?”—CLERICUS.

[The following are evergreen climbers for a cool conservatory, and grow very fast and intermediate between shrubby and herbaceous, lasting many years, and getting over the roof very quickly:—*Cobaea scandens*; *Maurandya Barclayana*, *semperflorens*, and *antirrhinifolia*; *Rodochiton volubile*, and *Lophospermum erubescens*. The following are hardier still and more shrubby, but slower in growing:—*Clematis odorata*, *cærulea*, and *Sieboldii*. The following will grow rapidly and be somewhat shrubby:—*Dolichos lignosus*, *Passiflora cærulea* and *cærulea racemosa*, *Lonicera Japonica*, *Jasminum revolutum* and *gracile*, and *Sollya heterophylla*.

Lists of hardy plants that will flower early in the conservatory you will find in a late number, such as Wallflowers, Deutzias, Weigelas, &c.

Eugenia Ugni.—Any cool house will suit it in winter where many degrees of frost would not enter, and any house not kept hot will do for it in summer. The *Guava* is easily managed, but when we had it under our care we never allowed it to be frosted in winter. If frost is excluded both plants will do well in a Peach house or a vinery where there has not been much artificial heat.

We have no knowledge of stove plants that could be kept in a window in winter, except those that die down to bulbs or tubers, such as *Achimenes* and *Gesnera*, and, having forcing houses in summer, we see nothing to prevent you keeping these in a cupboard in the kitchen in winter, and setting them agoing when you commence forcing.]

IMPLEMENTS AND OTHER CONSTRUCTIONS SUITED FOR GARDENS.

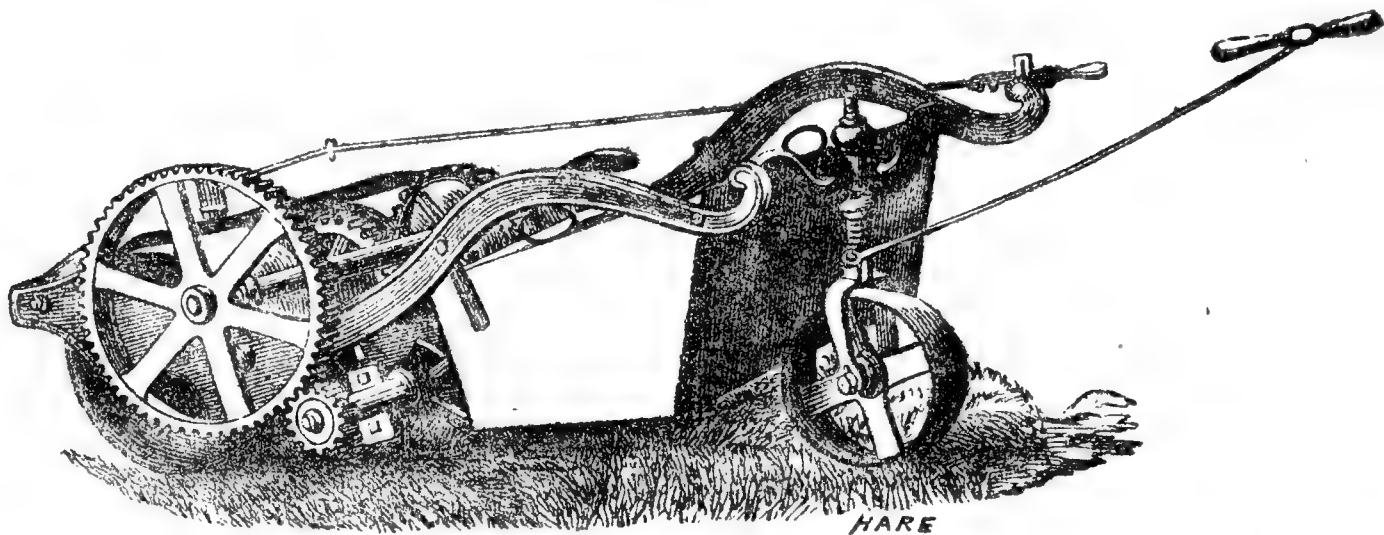
EXHIBITED AT THE HORTICULTURAL SOCIETY'S SHOW AT CHISWICK.

(Continued from page 253.)

MESSRS. A. SHANKS AND SON, Arbroath, exhibited the following:—

PATENT MOWING AND ROLLING MACHINE FOR HAND POWER.—This machine, from the introduction of a swivel in the front or guiding pulley, is admirably fitted for mowing in intricate places, around flower-beds, verges, &c., which it

does without any shifting of rollers. The machine is compact and durable, and gives great satisfaction both as regards the ease with which it can be worked and managed, and the superior style in which the work is executed.



THOMSON'S RETORT BOILER.—This new form of boiler for heating by hot water was designed by Mr. Thomson,

gardener, Dalkeith Park, Dalkeith. Messrs. Shanks state that the following are some of the advantages afforded by

Fig. 2.

Fig. 1.

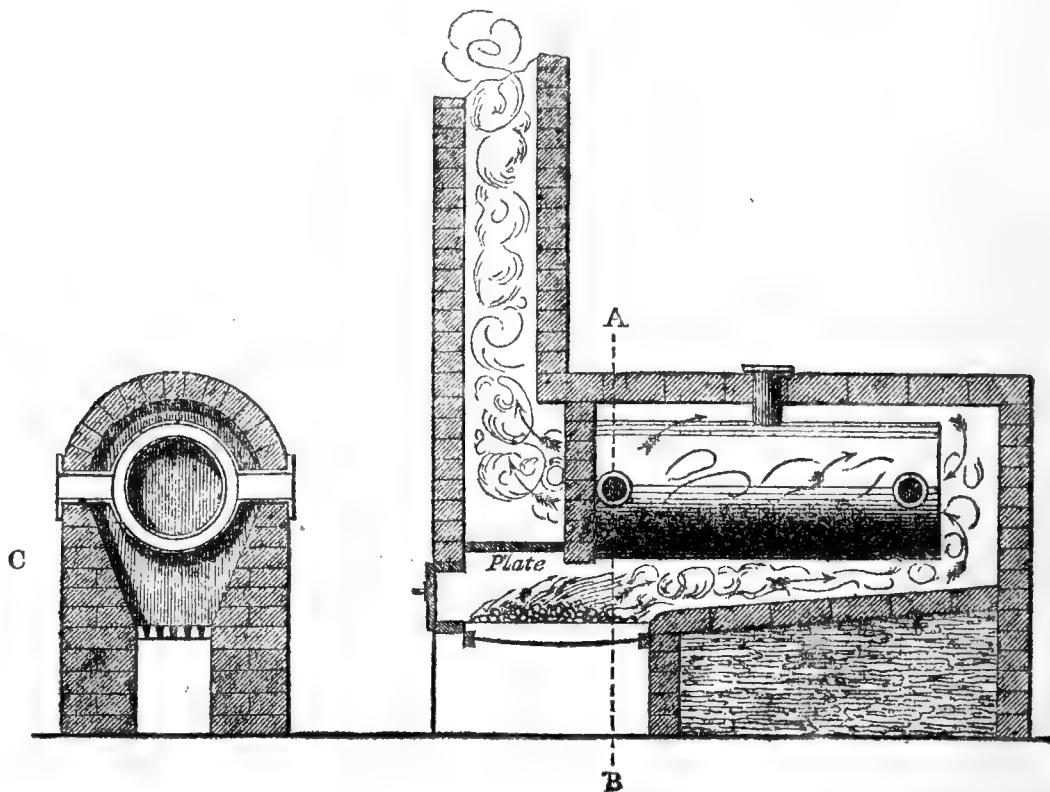
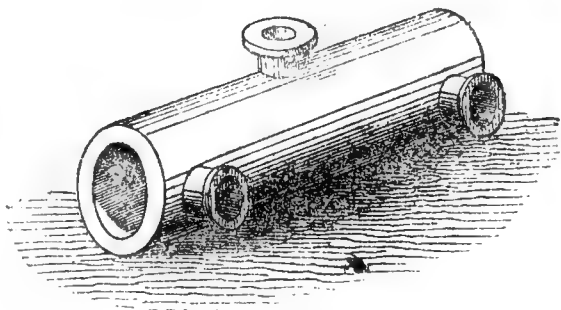
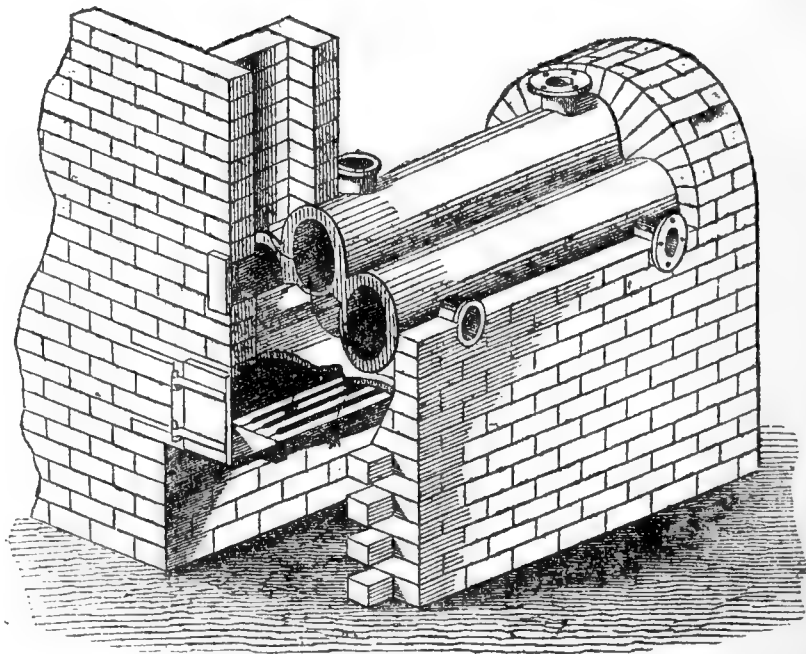
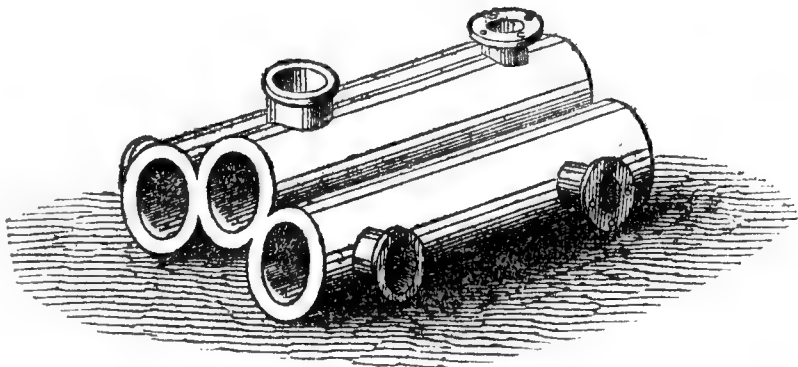


Fig. 4.

Fig. 3.



REFERENCE TO WOODCUTS.—Fig. 1. The Single Retort Boiler, to heat 1000 feet of 4-inch pipe. Fig. 2 shows how Fig. 1 should be set. C section on A B. Fig. 3. The Triple Retort Boiler, to heat 4000 feet of 4-inch pipe. Fig. 4 shows how Fig. 3 should be set for radiating heat from the boiler direct. If placed where that is not required fix as Fig. 2 is shown.

the use of Thomson's Retort Boiler:—The boiler is so constructed that the greatest possible amount of surface is placed over the fire. In proportion to its surface it contains a very small quantity of water, thereby causing the circulation to begin almost immediately upon the application of the heat. Every part of the boiler admits of being swept clear of soot in about a minute; the advantage of this is obvious, for soot, when settled on the boiler, acts as a non-conductor, and prevents the action of the fire on the boiler. The boiler is so constructed that it can be fixed inside a house or pit, so that heat can be radiated from it without the possibility of any escape of smoke or noxious

gas, and thus the whole action of the fire may be within the structure to be heated by it. The boiler admits of a perforated pipe being so fixed as to throw jets of air into the flame at the point where it begins to return through the boiler, which tends to more perfect combustion, and in a greater degree to the consumption of smoke. The boilers are already at work in many parts of England, Scotland, and Ireland, and have never failed to give complete satisfaction, not only in regard to their simplicity in management and economy in attendance and fuel, but also in regard to the power of heating which they possess.

(To be continued.)

AGALMYLA STAMINEA.

(LONG-STAMENED AGALMYLA.)

THE large Silver Medal was awarded to Messrs. Veitch and Son, of Exeter, for a beautiful new Gesnerwort, named *Agalmyla staminea* (Fig. A), obtained from Java, through their collector, Mr. Thomas Lobb. The plant exhibited was the first that had bloomed in this country; it was a stout, herbaceous, creeping-stemmed plant, with large elliptic leaves, from the axil of which was produced a dense cluster

of rich velvety crimson flowers, like those of some *Æschynanthus*. Though beautiful, even in the condition in which it was shown, it, however, conveyed no sufficient idea of what it may be expected to become when better grown; for in a dried specimen from Java, which was also exhibited along with it, instead of one bunch of flowers on a branch it had seven, clothing the shoot for about two feet with its

gay blossoms. Being a plant of easy cultivation, it will no doubt become one of the gayest inhabitants of our stoves. With it was a branch of *Medinilla speciosa*, bearing a fine cluster of purplish-red fruit, of which the accompanying woodcut will give some idea, and which are nearly as hand-

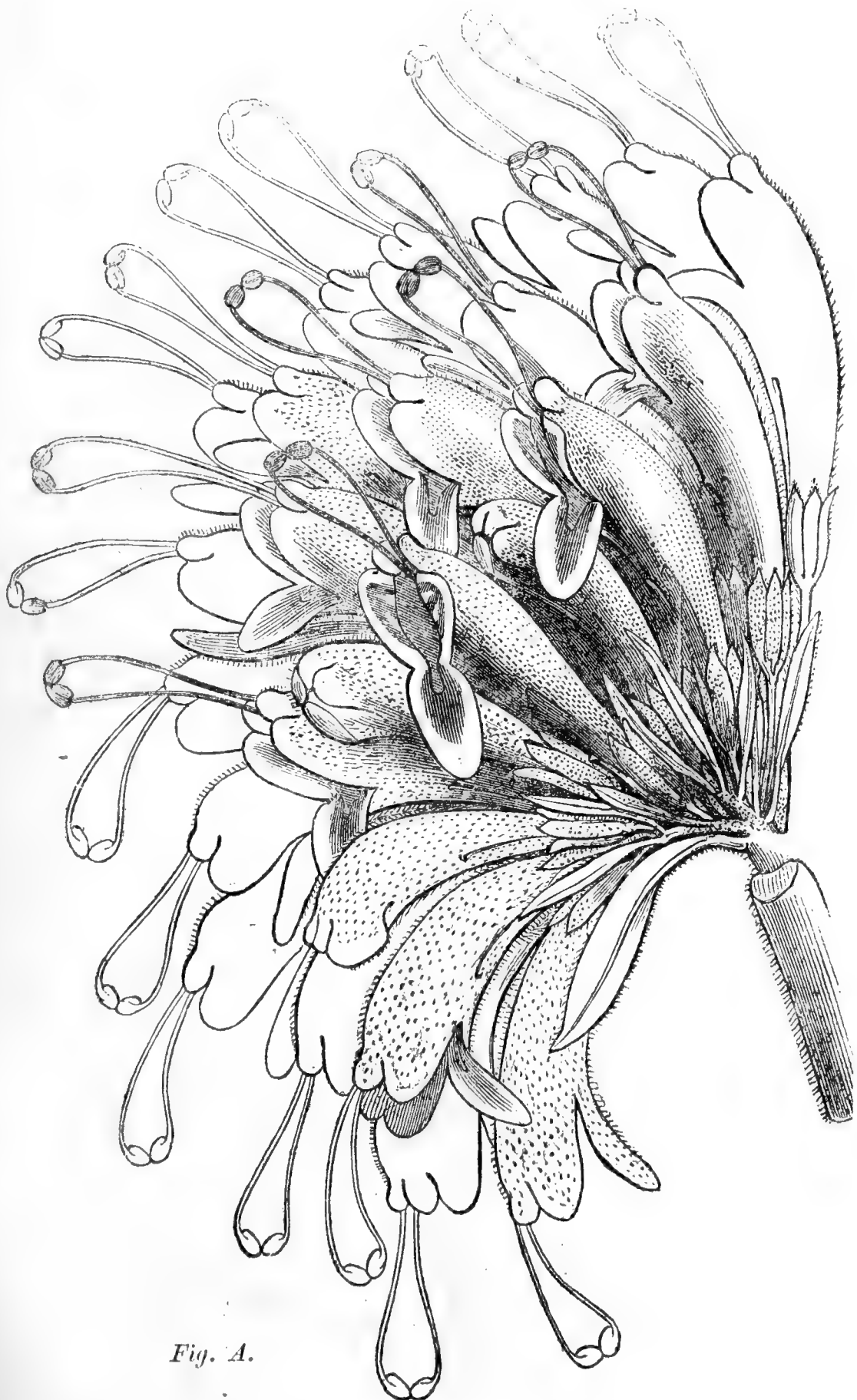
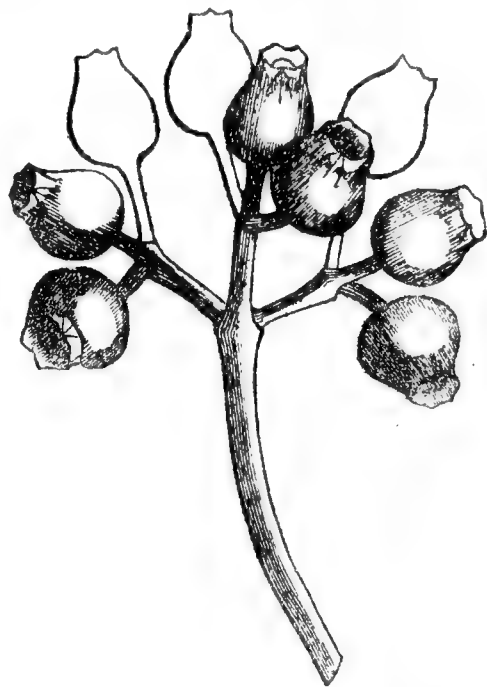


Fig. A.

Agalmyla staminea.



some as its semi-transparent pink flowers of summer. This is also a Java plant, whose broad concave fleshy leaves, large bunches of flowers in summer, and fruit in autumn, deservedly place it among stove plants of first-rate character.—(*Horticultural Society's Journal*.)

[A coloured portrait of the *Agalmyla staminea* is in the fifteenth volume of "Paxton's Flower Garden." The generic name is derived from *agalma*, an ornament, and *hule*, a forest, for it is a beautiful decoration of its native woods. It requires a moist, warm stove, with liberal watering and syringing during its period of growth. When at rest it must be kept nearly dry. A soil of two parts turfy peat, one part loam, and one part sand, with good drainage, suit it. It is propagated by cuttings planted in sand under a glass in heat.

Medinilla speciosa is beautifully represented in the "Botanical Magazine," t. 4321. As its name (showy) implies, it is one of the most handsome of the genus. It produces a fine panicle of delicate rose-coloured flowers, drooping gracefully from among rich green and ample foliage.]

HARDY PLANTS FLOWERING IN JULY AT SOUTHAMPTON.

Acanthus spinosus, 2½ feet, purple and white.
 Aconitum Chinense, 4 feet, blue and white.
 Aster amellus, 2 feet, pink.
 „ alpinus, 6 inches, lilac and white.
 Betonica stricta, 2 feet, red.
 „ grandiflora, 1½ feet, red.
 Campanula rotundifolia, 3 feet, blue.
 „ alliariaefolia, 2 feet, white.
 „ pyramidalis, 3 feet to 4 feet, blue and white.
 Catananche bicolor, 3 feet, blue and white.
 Calystegia pubescens, 6 feet to 8 feet, pink (climber).
 Clematis vincetoxinum, 2 feet, white.
 Convolvulus althæoides, 4 feet, pink (climber).
 Dianthus deltoides, 6 inches, red and white.
 Eryngium alpinum, 3 feet, blue.
 „ amethystinum, 4 feet, blue.
 Epilobium Dodonæi, 2 feet, pink.
 Funkia lanceæfolia, 2 feet, blue.
 „ marginata, 2 feet, blue.
 „ cærulea, 2 feet, blue.
 „ Sieboldiana, 2 feet, white.
 Gentiana cruciata, 9 inches, blue.
 „ septemfida, 1 foot, blue.
 „ asclepiadea, 1 foot, blue.
 Gaura Lindheimeria, 4 feet, white and pink.
 Gnaphalium margaritaceum, 2½ feet, white.
 Lobelia fulgens multiflora, 3 feet, crimson.
 „ syphilitica, 2 feet, blue.
 „ splendens, 4 feet, scarlet.
 Lilium aurantiacum, 3 feet, orange.
 „ colchicum, 3 feet, yellow.
 „ tigrinum, 4 feet, orange-spotted.
 „ candidum, 3 feet, white.
 „ Japonicum, 3 feet, white and brown.
 Lythrum virgatum, 2 feet, purple.
 „ villosum, 2 feet, lilac purple.
 Lathyrus latifolius, 6 feet, pink.
 „ „ flore-albo, 6 feet, white.
 „ tuberosus, 2 feet, pink.
 Monarda didyma, 3 feet, red.
 „ punctata, 2 feet, lilac.
 Enothera speciosa, 2 feet, white.
 Phyteuma campanuloides, 2 feet, blue.
 Phloxes in great variety, 2 feet to 4 feet.
 Rudbeckia laciniata, 5 feet, yellow.
 Sedum populifolium, 9 inches, white and pink.
 Sempervivum arachnoideum, 4 inches, red.
 Veronica maritima cærulea, 2 feet, blue.
 „ „ alba, 2 feet, white.
 Wahlenbergia grandiflora, 1 foot, sky blue.
 Zauschneria Californica, 1½ feet, scarlet.—WM. UPRIGHT.

BRITISH POMOLOGICAL SOCIETY.

THE ordinary Meeting of the Society was held July 23rd, 1857, Robert Hogg, Esq., V.P., in the chair.

Mr. William Carmicheal again exhibited his seedling Peach, the *Stirling Castle*. They were this time far too ripe and almost devoid of flavour; it was considered very questionable if they have ever possessed the constituents necessary to a fruit of superior quality. The impression formed was, that it did not approach in quality the *Royal George* and other esteemed varieties. Mr. Carmicheal having reported that it was superior to such varieties at Dunmore, it was much desired that he should have sent other varieties from the same garden or neighbourhood, that its relative value might be ascertained. On being written to, however, he replied that no other kinds were ripe with him, and he could not assist in obtaining such a comparison.

This matter is mentioned more fully to draw attention to the importance of sending, as often as possible, with new varieties, specimens of the older kinds upon which they are supposed by the raisers to be improvements. The Society is anxious to certify to the merit of every variety which pos-

sesses it, although its usefulness may only exist in a limited locality, and in such cases it is equally desirous of defining such locality as exactly as possible.

Messrs. Ivery and Son, nurserymen, Dorking, again exhibited a fine bunch of their seedling *White Grape*. It was considered to have fully maintained the opinion expressed of it last year, viz., that it will prove a useful, early, good-setting white Grape, equal in flavour and berry to the *White Muscadine*, and superior in the form of bunch and general appearance to both that variety and the *White Dutch Sweet-water*, and equally superior to the latter in the important property of setting. It was remarked that frequently no seeds, and rarely more than one or two, were found, although their absence did not occasion any diminution in the size of the berries.

Mr. Morris, gardener to Thomas White, Esq., Manor House, Wethersfield, Essex, exhibited three fine Melons, described as a cross between *Bromham Hall* and *Trentham Hybrid*. They were considered very fine, and excellent in flavour, but were not supposed to differ from the variety known as *Fleming's Trentham Netted Hybrid*.

Mr. Kitley, of Lyncombe Vale, near Bath, exhibited twelve varieties of seedling *Gooseberries*. It was, however, not found that any of the varieties were so super-excellent in flavour as to be improvements on the already too numerous kinds in cultivation, unless the latter were not generally adapted to the soil of Bath and its neighbourhood.

A variety numbered 30, large, white, resembling *White-smith* in colour and flavour, but hairy, was the best of the group.

Mr. Braid, nurseryman, Hendon, exhibited three fine dishes of well-grown *Black Hamburgh Grapes*, which were much admired.

ON THE EGGS OF BEES.

IN a previous number we made some remarks on small drone bees, which are noticed by "AN OLD APIARIAN" at page 220. Among other things he says, "I no more believe the queen is aware of the sex or other peculiarity of the egg than a bird in laying, or a female of her unborn offspring." This is lowering her instinct, indeed, even beneath that of the queen wasp, whose nest contains only two sorts of cells, while honey-combs contain four, though only three of them are for eggs. The queen bee's mode of laying her eggs at certain periods is so well known that we need not mention it, though it is at variance with the assertion of the writer, who quotes from Huber in favour of his notion "that the bodies of queens are shortened when fecundation has been retarded, whilst the first two rings next the thorax are uncommonly enlarged." Upon this he observes: "Here then, to my mind, is an explanation of the mystery. The poor queen is disabled from depositing her eggs in any cells but large ones. . . . The workers' cells are, of course, rendered unavailable for breeding, and hence the perplexing theory as to the sole propagation of drones."

Perplexing indeed, for such is contrary to his own words, and also to the false statement of Huber. He says: "All this is notoriously erroneous, Dr. Dunbar, Dr. Bevan, and Mr. Wighton himself having, with others, observed that the order of laying is frequently disturbed, the queens depositing an egg one minute in a worker's, and the next in a drone's cell."

Again, we cannot for a moment agree with the notion that a "single kind of egg is requisite for the production of queens, drones, and workers." This is the first time we have heard such an assertion, although the writer says, "All reasoning seems to me . . . to favour this theory."

We know of only one false reason, and that is, an enlarged worker's cell in which there is a grub will produce a true female or queen bee. But as we have before stated in these pages that working bees are females, therefore the size of the cell does not, of course, alter the sex nor the appearance of the insects except in the greater length of their abdomens. We would fain believe, however, that queen bees increase a little in bulk with age, contrary to the rule that insects bred from grubs take their true size when in that state; and the young ones have not the yellowish tinge on

their sides like old ones. Be this as it may, we have already spoken of the queen wasp, whose manner of laying eggs is closely allied to that of the queen bee. The eggs of both produce queens, drones, and workers. The eggs which produce male and female of the yellow pest are laid in the same comb, the cells of which are all of the same size—proof enough that large cells do not alter their sex; and we may safely say, if a drone's egg were put into a queen's cell it would produce a king instead of a queen bee.

It is vain to try to explain the cause why eggs produce the different sex. It is analogous to the germ of animal life: we know nothing further.—J. WIGHTON.

TO CORRESPONDENTS.

CORRIDOR OF THE CRYSTAL PALACE.—"S. P., *Rushmere*, was not aware of the fact that the row of Rhododendrons along the border of the colonnade at the Crystal Palace is *temporary*. He saw the second, or perhaps the third set of plants that have been in the row since last Christmas. The best plants are taken out of the shrubberies and put in the row in January or February to bloom in April. After they are past their best they are removed to make room for a second lot, and so on. Sir Joseph Paxton told the writer, and the writer saw it stated in *THE COTTAGE GARDENER*, that herbaceous plants, spring, summer, and autumn flowers for borders, would be 'taken up' there as soon as more pressing things could be settled. We know of no better example of flower gardening to appeal to in this country. If we have a better, where is it?"—D. B.

PHLOX SUBULATA.—"In looking over the list of plants in *THE COTTAGE GARDENER* I see, at page 220, *Phlox subulata* mentioned as being bright pink, which is not correct, as that is a light pink with a portion of white. I have no doubt the plant called *subulata* in the list is either *ovata* or *crassifolia*. If poultry-keepers would feed their chickens with boiled rice they would have no occasion to call tobacco smoke into requisition."—AN OLD SUBSCRIBER.

[Chickens must have something besides rice, for there is little or no nourishment in it.—ED. C. G.]

POPPIES (P. Q.).—When the box arrived it was filled with a mass of petals: two flowers only remained perfect, and they fell to pieces in unpacking them. They seemed very beautiful, and looked like immense quilled China Asters. They are doubtless very handsome.

POT POURRI (Sarah).—This, we presume, is what you mean by "a perfume made of sweet-scented leaves, &c., for fancy jars." Mix half a pound of common salt with a quarter of a pound of saltpetre, a quarter of an ounce of storax, half a dozen cloves, a handful of dried bay leaves, and another handful of dried lavender flowers. This basis of the Pot Pourri will last for years, and you may add to it annually petals of roses and of other fragrant flowers gathered on dry days, as fancy may dictate. By the same rule you may add, if approved of, powdered benzoin, chips of sandal wood, cinnamon, orris root, and musk. We have known a very excellent Pot Pourri made in winter with a pound of dried rose petals bought at a chemist's, mixed with four ounces of salt and two of saltpetre, on which were put eight drops of essence of ambergris, six drops of essence of lemon, four drops of oil of cloves, four drops of oil of lavender, and two drops of essence of bergamot.

HOLLYHOCKS (P. M'Keany).—These sometimes come single if allowed to decrease in vigour after being originally double. Cut down the stems as soon as the bloom is passed, and give the plants a good mulching with decayed dung, and frequent waterings with liquid manure throughout the autumn and spring. The suckers you planted will come true, and so will plants raised from eyes as directed at page 271.

PIT FOR PROPAGATING (J. S.).—Heating by a flue will be cheapest, and answer under good management. Heating by tank or pipes would be best, and if you combined both you would lose little heat. Thus, get a retort boiler for 50s., the flue from which to go through part of the house; twenty-four feet of four-inch pipe or so will enable you to keep out frost. To propagate as in a hotbed you will require as much more for bottom heat. We presume you have studied all the details of propagating and other houses in this book, and therefore we could not advise you better than you know, but if on any point you consider we could assist we shall be happy to do so. Be sure of a sale, or there will be little profit in your undertaking.

DISEASED CUCUMBERS (A. S.).—You will find a long article in No. 427 by Mr. Fish, and much by other contributors in the same volume. Mr. Fish says he has seen nothing of the disease since. Try fresh seed next year, fresh soil, and thoroughly scrub and clean the house. Then in dull weather do not use too much heat, and give plenty of air, leaving a little on at night; but, above all, do not feed the roots too much.

GREEN-EDGED PETUNIA (T. P.).—Yours is one of the green-edged Petunias, which are now so common that some of them turn up in almost all packets of seeds bought in London. Some people admire them, and we recorded our own opinion of them in 1852 or 1853. When they were first exhibited at the Regent's Park Show we cultivated a few of these green-eyed monsters to please our friends. We have one which is nearly as thick as a calf's ear. Yours is one of the best we have seen, and if you keep the pollen of other Petunias from it, ten, twelve, or fifteen per cent. of its seedlings will come green-edged also. We have several of them in our own seedling bed.

DIELYTRA SPECTABILIS (J. R.).—If the plants are in largish pots we would give a little water until the leaves got yellow, then refrain,

and top dress next year. If the pots are small and the leaves fresh repot now, but if beginning to brown refrain until next spring. If in a twelve or fifteen-inch pot that will grow a fine specimen for years; but why flower them in pots out of doors when they would do as well in the borders? The having them in pots is to flower them early in the house.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

AUGUST 26th. BRADFORD. Secs., M. Brooksbank and H. Beldon, Esqs., 12, Queensgate Street, Bradford. Entries close August 18th.
AUG. 29th. CALDER VALE. Sec., W. Irvine, Esq., Holmefield, Halifax, Entries close August 15th.
SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.
SEPTEMBER 4th. SOWERBY BRIDGE. Sec., F. Dyson, Esq. Entries close August 26th.
SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Sec., Mr. H. Churchill, King's Head Hotel.
SEPTEMBER 9th. HECKMONDWIKE. Secs., Mr. G. H. Rhodes and Mr. Fred. Brearley. Entries close August 31st.
OCTOBER 1st and 2nd. WORCESTER. Sec., Mr. G. Griffiths, 7, St. Swithin Street, Worcester. Entries close Sept. 19th.
OCTOBER 7th. SOUTH WEST MIDDLESEX AGRICULTURAL SOCIETY. At Gunnersbury Farm, Ealing. Sec., J. Gotelee, Hounslow.
NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.
DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.
DECEMBER 30th and 31st. BURNLEY AND EAST LANCASHIRE. Entries close December 1st. Secs., Mr. Angus Sutherland and Mr. Ralph Landless.
JANUARY 4th, 1858. KIRKCALDY POULTRY AND FANCY BIRD SHOW. Sec., Mr. Bonthron, jun., Thistle Street.
JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.
JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.
FEBRUARY 3rd and 4th, 1858. PRESTON AND NORTH LANCASHIRE. Secs., Mr. R. Teebay and Mr. H. Oakey, Preston.
N.B.—Secretaries will oblige us by sending early copies of their lists.

JUDGES.

HOLDING the position we do in the poultry world it will easily be believed that no question which affects it can be indifferent to us. We do not pretend to more knowledge of the subject than some of our readers and contributors, but the facilities we have for acquiring an insight into the opinions of most of the leading amateurs and exhibitors of the day, the experience we have had, the wish of our subscribers that we should give our opinion on the question, and the earnest desire we have to settle any differences, and to establish a pursuit every way pleasing and important to us on a firm and unquestionable footing, induce us to approach the vexed question of Judges.

First, which is preferable, a single Judge or several?

We write this without any letters before us, and without reference to any that have appeared, that is, any particular reference. We wish to treat the question impartially. We do not believe in all the compacts and iniquities attributed to Judges. Where they exist let them be fearlessly and openly exposed; but we do believe that three or even two Judges offer a security to exhibitors against unfairness that they cannot have where there is but one. Admitting for argument's sake, *but for that only*, that one Judge has a bias for certain pens; admitting farther that he knows those pens—a most difficult thing in a large show; admitting, again, that he would dishonestly award an unmerited prize, we say that his colleagues, honourable men, and equal to their duties, would not allow it. Honours must be given by plurality of voices, and this is one of the securities of several Judges, that two will always out-vote one.

We have no hesitation in saying decidedly we think it better there should be several. Two or three Judges can award the prizes in less time than one. If, after the preliminary examination of a class, all are agreed that one pen unites all the qualities requisite for the first prize, there will be no doubt of the correctness of the decision. If, in a large class, three are all agreed, after one walk down, on the best pens, they can, without doubt, proceed to adjudicate, and do so correctly. One may overlook a defect in an apparently perfect pen; it is possible two may do so, but the third will have seen it. Three Judges will award in a class in half the time that it would take one to do it, and far more correctly. We do not speak of small local shows, where the good birds are the exceptions, but of competitions such as

we see at the large exhibitions, where nearly every number represents a good pen of birds.

Even with three Judges many walks up and down are necessary, and then there is difficulty; but one man becomes bewildered, and then those little oversights occur which have happened to the best of our Judges at times. If several are acting, and there is a difference of opinion as to a pen, it is generally received by them together, and then it is that the opponent of the pen will discover some fault which has escaped the notice of his colleagues. A claw deficient or a claw too many, a faulty comb or two or three foul feathers—either of these would, in all probability, escape the eye of one Judge in his hurry and anxiety.

Incompetency is a charge soon got rid of. The remedy then is in the hands of exhibitors. We do not approve of Committees being coerced in their selection, but when those who undertake to adjudicate are manifestly unequal to the task, an exhibitor may, we think, well ask whether the same parties will act again. If they do he can withhold his nominations.

The object of an exhibition is to reward the best birds, and if the award is made to them there is no cause for complaint. However difficult it may be to find Judges able to undertake all the various classes, yet among the exhibitors in each class there are plenty of perfect judges of the breed they show. Every class, then, is thoroughly sifted by competent censors, and anything approaching to injustice is immediately pointed out. Favouritism can only be shown by unduly awarding to inferior birds that which should be the meed of the best. If, then, bad birds are found to take prizes when competing with their betters, the Judge is either incompetent or worse—we should certainly say the former. If favouritism or collusion had existed, then with the pains taken it would long since have been unmasked. Nothing is more difficult than to recognise fowls in a large show, and, save one or two pens so pre-eminent in merit that their victory was always easy and certain, we believe no Judge can select birds unless he previously knows the number of the pen. This would be sheer roguery, and cannot be exposed too openly.

The intention of a show and the duty of a Judge are to reward the best birds. If this be done there can be no ground for finding fault. There may sometimes be differences of opinion, but surely these may exist without imputing unworthy motives. We know that at many of our largest shows our best Judges, differently associated at different times, have gone through their duties without varying in opinion throughout the day, and at every show adding to the laurels of already distinguished pens.

It has been an unjust idea to attribute long-continued success in some instances to occult means. We may here well take a lesson from the largest and best-managed Show in the world, just now over at Salisbury—the Royal Agricultural. In two breeds of sheep all, or nearly all, the prizes were taken by two exhibitors, Messrs. Sanday and Jonas Webb, and it is no new thing for them to do so. Their success is not attributed to favouritism or to collusion, but to the fact of having the best animals. These will be sold and re-exhibited, probably with the same success, until they are as well known as their owners. The only result will be that people, instead of dropping dark hints and impugning the Judges, will secure some of the breed, and finally, perhaps, defeat them. It seems to us that this is a feeling which should be introduced into some members of the poultry world. If they will look more to their stock they will find that *success is not dependent on Judges, but on the birds.*

Let Committees choose Judges in whom they have confidence, and then let them adopt the Birmingham rule, and that of the Crystal Palace, that **THEIR DECISIONS MUST BE FINAL.**

Let roguery and collusion be openly exposed; let incompetency be politely dismissed; but let those who honestly fill an office that has nothing but the love of the pursuit to recommend it be safe from innuendo and dark phrases.

In thus expressing ourselves we regret differing from Mr. Hewitt, for he prefers one Judge to several, but we do not condemn him for checking those whom he had reason to believe were guilty of foul practices; neither do we agree with those who call upon Mr. Hewitt to name the Judges

whom he believes have thus acted. There is such a thing as an action for libel; and even if he pleaded a justification and obtained a verdict he would have to endure anxiety of mind, and to pay much of his own attorney's costs—penalties we have no right to call upon him to endure. He has said enough to put exhibitors and Committees on their guard, and they should be grateful to him for performing disinterestedly a task repugnant to his feelings.

FALCON-HOCKED COCHIN-CHINA FOWLS.

WHAT is the present state of the law regarding falcon or "vulture-hocked" birds exhibited in the classes for Brahmas or Cochins? Are birds to be considered as more perfect for having this distinguishing feature, or are they, *because* they have it, to be held the less deserving of a prize? Suppose two pens equally well matched, equally large, and equally good in colour and form, to be exhibited in the same class, which pen would be preferred for the first prize, the birds which *had*, or which *had not*, the "vulture hock?"

I venture to ask for information, as such contradictory assertions exist upon the point. Old advertisements and old catalogues of Mr. Stevens's sales teem with descriptions of birds in which the "vulture hock" is put prominently forward as a merit; yet latterly in reports of shows I have seen that a remarkably good Brahma cock was only "commended" *because* he was "vulture-hocked," and a Cochin breeder of repute lately declared that his chickens were disqualified because one was "vulture-hocked." Of course, if one bird in a pen is so furnished, all must be similarly feathered; but am I correct in supposing that vulture hocks are rather suspicious appendages to a Brahma or Cochin, and to be eschewed by exhibitors in shows where there is likely to be close competition?—FALCONIDES.

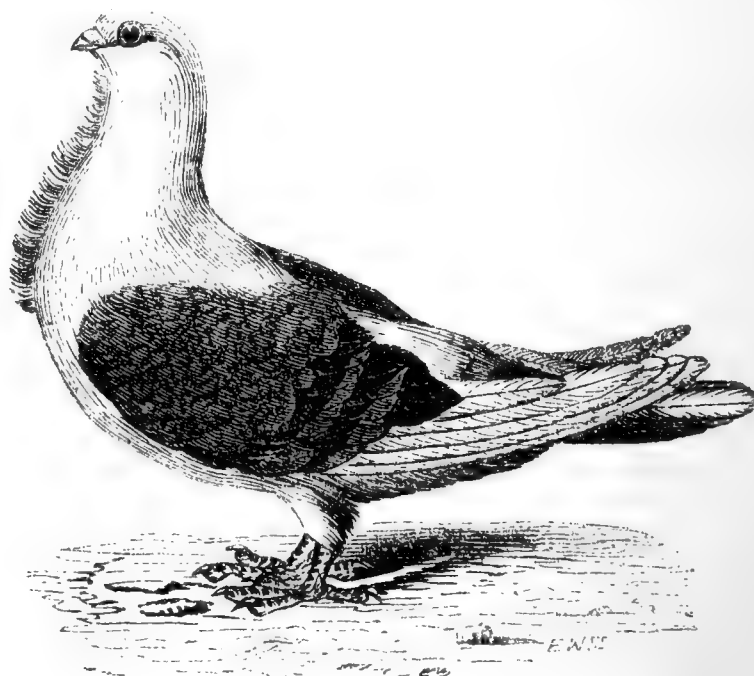
[The early Cochins were never vulture-hocked, and it was only when they were a little on the decline that this appendage was introduced. It has never been considered a desideratum, and we should say that in two pens similar in every respect, and of course of equal merit, if the birds in one were vulture-hocked, and in the other not, the latter would be preferred. Brahmas should not have it. It is more common in White Cochins than in any other breed. It does not amount to a disqualification, but it is certainly a disadvantage in competition.]

CLASS 7.—FRILLED PIGEONS.

VARIETY 2.—THE TURBIT (*Columba turbita*).

French.
PIGEON CRAVATE.

German.
MÖVEN TAUBE.



THIS is probably the variety which Aldrovandus alludes to as the *Columba Cypria cucullata* without hoods, as they certainly have some points of resemblance to the Jacobin, the *Cypria cucullata* proper. Buffon says they

produce mules with the Turtle Doves, and a bird said to be so bred was exhibited at the late Anerley Show.

The English name is most likely derived from the Latin in reference to its frill or ruffle, and the French name *Cravate* has a like signification. The German name, *Möven* or *Movechem*, has reference to its colour or marking, which is thought to resemble the sea-mew, or white with bluish grey wings.

The two chief properties are its frill and gullet. The frill is formed by the feathers opening and standing up on the breast in the form of a ruffle or shirt frill, which extends down the whole front of the neck, and the more the bird has of it the more it is esteemed. The gullet is an enlargement of the throat from the beak to the frill—a fine narrow development of skin, something analogous to the dewlap in animals, which takes off the abrupt junction between the beak and throat. As our Turbits have been much neglected as regards their high culture, this valuable property is now rarely seen, and it behoves fanciers to pay more attention to this peculiar point. The beak is short and thick; hence the Dutch name *cort-beke*. The shorter the beak the better. The eyes are large, of a black or dark hazel colour. The head should not be round, as described by most writers, but broad and somewhat angular, the *supra-orbital ridge* above the eyes being prominent. The size of the bird is another point, and the smaller it is, and the more compact and rounded in form of body, the more it is valued.

Colour.—The secondary wing feathers, greater and lesser wing coverts, and scapular feathers should be coloured, the remainder of the plumage unspotted white; and thus they are designated Blue-shouldered or Black-shouldered Turbits, as the colour of that part indicates. Any white feathers among the coloured shoulder feathers, or coloured ones where they should be white, as the colour extending too far up the pinions or down the thighs, are considered blemishes. The shoulders are of various colours, as black, blue, red, yellow, copper, dun, chequered, or mealy. The old fanciers admired the Blacks, Blues, and Duns most when they had tails of the same colour, but such are now rarely seen: at present all have white tails. Wholly white Turbits have been also written of, but I have never seen any that might not be with as much propriety called Owls, for the distinction between the Owl and Turbit consists in the head, beak, gullet, and frill, and though slight and scarcely observable to an uninitiated eye, yet there is sufficient difference to constitute them separate varieties independently of colour.

The Turbit is one of the prettiest of our fancy Pigeons, and is universally admired. They are light and active on the wing, and if trained will fly almost as well as Tumblers; but their beaks are too short to admit of their being good foragers, nor are the better bred ones very productive.

Some years back Canterbury used to be famous for Turbits; but I expect we must now look for a re-importation from the Continent to have them again with the peculiar-formed head and well-developed gullet, as the few fanciers who have bred them in England seem to have reduced them to the Tumbler standard, which is evidently wrong in a bird so distinct. Some Turbits are point-headed, others are turned-crowned, but one is considered as good as the other, though I regard the smooth head as the original.—B. P. BRENT, *Dallington, Sussex*.

SHEFFIELD POULTRY SHOW.

THE first Exhibition of the Sheffield, South Yorkshire, and North Derbyshire Poultry Association was held in Norfolk Park on the 28th, 29th, and 30th of July, and had great success. From the comparatively small extent to which the breeding of first-class poultry had been carried in this neighbourhood, considerable fears were entertained, when first the projected Show was mooted, that it would be impossible to collect together such a number of poultry of this description to form an Exhibition of sufficient variety and excellence as to attract visitors. Through the exertions, however, of an active Committee, aided by liberal subscriptions from the gentry of the neighbourhood, such a list of prizes was offered as induced many of the most celebrated

breeders of poultry from all parts of the kingdom to enter for competition, and the result was a collection of poultry which, for number, variety, and excellence, those most competent to form an opinion pronounced to be one of the best that has yet taken place. The weather on all three days was everything that could have been desired, and the number of visitors was such as not only to insure the Committee from loss, but to leave them with money in hand, with which it is contemplated to establish a fund for holding a similar Exhibition in Sheffield annually.

Norfolk Park had been kindly placed at the service of the Committee, and about two acres of the tableland at the upper end was boarded off for the holding of the Exhibition. The poultry was arranged in a wooden, canvass-roofed booth at the lower end of this inclosure, while the remaining part was occupied as a promenade ground, and for the exhibition of the agricultural implements, &c. Mr. F. Ward lent the collection of Chinese edge tools, cutlery, &c., which had recently been on view at the School of Art; and these, which were shown in a tent adjoining the poultry booth, attracted the attention of great numbers of the visitors. Near the entrance were also placed the two Russian guns, trophies from Sebastopol, presented to the town by the government.

The pens of poultry numbered 670, and were arranged in double tiers, the numbers following the order in the catalogue, commencing with the *Spanish*. In this class there were forty-two pens of birds, the whole pronounced by the Judges as "exceedingly good." The list of contributors included the names of several of the most celebrated breeders in the kingdom. Amongst the local competitors were Mrs. J. C. Hall and Mr. W. Sylvester, of Sheffield; Mr. P. Cadman, of Ballifield Hall; and Mr. R. J. Bentley, of Rotherham. Mrs. Hall contributed three pens.

The *Dorkings* were both extensive and fine, the various colours numbering fifty-two pens. Mr. Wilson Overend, Mr. S. Cockayne, Mr. T. Peace, Hampden View, Mr. T. Eyre, St. Philip's Road, and Mr. W. Harvey, Sheffield, Mr. R. Bentley and Mr. W. Harrison, Rotherham, were the local contributors. Mr. Titterton, of Birmingham, carried off the prize for the best pen of cock and two hens, and Captain Hornby for chickens. In Dorking cocks Mr. Harvey, of Sheffield, succeeded in carrying off the first prize with a remarkably fine bird.

The *Game* attracted very great admiration, and were the most numerous of any class exhibited, numbering upwards of 190 pens, of which 60 were single cocks entered in competition for the Silver Cup. Amongst the *White Game* fowls was a pen of three belonging to Mr. George Helliwell, of Walkley, Sheffield, which had carried off a prize at the Great Birmingham Show, and since at Thorne. On this occasion, however, they were distanced, the prizes for that class being awarded to Mr. Camm, of Southwell; Mr. Hague, of Holmfirth; and Captain Hornby. The Silver Cup for the best single cock was awarded to Mr. Dawson, of Birmingham, for a splendid Black-breasted Red cock. The Judge (Mr. Challoner, of Whitwell), from the great number and excellence of the birds, had considerable difficulty in awarding the prize for the Cup, and marked several whose claim had weighed strongly against the winner as "highly commended."

The *Cochin-Chinas*, of which there was a good show, particularly the single cocks, attracted a good deal of the attention of the visitors. Mr. Stretch, of Bootle, Liverpool, carried away two of the first prizes; and Mr. Harvey, of Sheffield, the second prize for chickens. Mr. Peters, of Birmingham, was the winner of one of the prizes in this class. With six pens of birds he carried off no less than three of the principal prizes, including the five guinea case of cutlery given for the third best three pens. In single cocks of this breed Mr. J. W. Lamb, of Sheffield, was the winner with a very large and fine bird.

Of *Brahma Pootras* the specimens exhibited were very good, though not numerous. In this class Mr. Harvey, of Sheffield, won the second prize with a pen priced at £20, while the first prize was awarded to Mr. R. Teebay, of Preston.

The *Golden* and *Silver-pencilled* and *Spangled Hamburgs* excited general admiration. The only local exhibitors were

Mr. S. Cocker, Sheffield; Mr. F. Lodge, Wortley; Mr. B. Makin, Attercliffe; and Mr. J. P. Jones, of Handsworth; but all the prizes were awarded to distant places. In this class Messrs. Bird and Beldon, of Bradford, exhibited a remarkably fine pen of birds, which the Judges, after the award, had the candour to admit had not, from the position they occupied, received the favourable notice which their merits warranted.

Of *Bantams* the show, though excellent in quality, was not so numerous as might have been desired. The celebrated local poultry known by the name of *Redcaps* was well represented, and though there were competitors from Bradford, Birmingham, Leeds, and Chesterfield, the whole of the six prizes were carried off by parties resident at Sheffield and the neighbouring villages of Owlerton and Hillsbro'.

The *Turkeys*, *Geese*, and *Ducks* were generally fine specimens, one of the former being of extraordinary weight and gay plumage. We heard of large prices being offered for several of the "Aylesburys," for which a decided preference is now given in the provinces as well as in the metropolis.

The exhibition of *Rabbits* was remarkably good, Mr. Wood, the Judge, stating that, in an experience of thirty-five years as a fancier, he had never seen it excelled. Mr. Child, of Birmingham, took the prize for length of ears with a pair whose ears measured nearly twenty-two inches from tip to tip.

A number of pens of poultry exhibited were sold at the prices affixed to them, and amongst these were the following:—Of *Spanish*, the pen No. 21, exhibited by Mr. W. Sylvester, of Sheffield, was sold to Dr. Dymond, of Wath, for £20; and the pen of three chickens, No. 32, was sold to Mr. W. Poynton, of Burslem, for three guineas; pen of three *Cochin-China* chickens, No. 266, sold to Mr. W. Harvey, of Sheffield, for five guineas; pen of three *Dorking* chickens, No. 66, was sold to Mr. John Chapman, of Mottram, for eight guineas; pen of *Coloured Dorkings*, No. 59, sold to Mr. Carr, of Wortley, for four guineas; pen of *Dorking* chickens, fifteen weeks old, No. 73, sold to Mr. W. Spence, of Weston, near Otley, for three guineas; pen of three *Red-cap* chickens sold to Mr. Jonathan Woollen, of Heeley, for one guinea; pen of *Silver-laced Bantams* sold to Mr. W. Harvey, of Sheffield, for two guineas; pen of *Golden-laced Bantams*, No. 417, exhibited by Mr. F. Wragg, of Sheffield, was sold to Mr. W. Hutton, of Gate Burton, for three guineas; pair of *Geese*, No. 542, sold to Mr. John Chapman, of Mottram, for £10; three *Aylesbury Ducks*, aged fifteen weeks, No. 553, sold to the Rev. G. Hustler, of Appleton, for £3 5s.; three *Rouen Ducks*, aged eleven weeks, No. 560, sold to Mr. J. K. Fowler, of Aylesbury, for two guineas. Of the *Pigeons* the pair of *Nuns*, No. 603, were sold to Mr. Billy-cald, of Ison Green, Nottingham, for two guineas; a pair of *Fantails*, exhibited by Mr. James Smith, of Walkley, were sold to Mr. S. Cocker, of Collegiate Crescent; and a pair of *Trumpeters*, No. 626, were sold to Mr. E. Middleton, of Sharrow.

The gentlemen who officiated as Judges were, for Poultry, Mr. T. Pearson, of Holbeck, near Leeds, and Mr. Tegetmeier, of Tottenham, and Mr. Challoner, of Whitwell, the latter taking the various classes of Game fowls. Mr. Wood, of Bridgehouses, Sheffield, was the Judge of Rabbits, and Mr. John Brooks, of Sheffield, of Pigeons. We gave a list of the awards last week.—(*Sheffield Independent*.)

POULTRY AT THE NORTH LINCOLNSHIRE AGRICULTURAL SHOW.

THE North Lincolnshire Agricultural Society held their twentieth annual Meeting at Louth on Thursday, the 30th ult. The Meeting was a very large one; for, although the Show was only open to the public for four hours, nearly 8,000 persons paid for admission. The show of stock and farm implements was very large. The poultry entries were not very numerous. Mr. Challoner officiated as Judge. We subjoin the list of prizes awarded:—

DORKINGS.—First, P. W. Barnard, Bigby. Second, T. M. Keyworth, Lincoln.

SPANISH.—First, T. M. Keyworth. Second, P. Burniston, Brigg.

COCHIN-CHINA.—First, G. W. Boothby, Louth. Second, R. E. Duckering, Northorpe.

GAME.—First, M. Elmhist, West Ashby Grove. Second, T. Grantham, Stixwold.

HAMBURGHES.—First, W. Gresham, Ulceby. Second, P. Burniston.

POLANDS.—First, T. Marris, Ulceby. Second, W. Haynes, Louth.

BANTAMS.—Prize, G. Burwell, Thonock.

DUCKS (Aylesbury).—First, J. Nainby, Brigg. Second, P. W. Barnard.

DUCKS (Rouen).—First and Second, T. Marris.

DUCKS (any other variety).—First and Second, T. Grantham.

GEESE.—First, G. Burwell. Second, T. Grantham.

TURKEYS.—First and Second, T. Grantham.

GUINEA FOWLS.—First and Second, T. Grantham.

THREE PAIRS OF FANCY PIGEONS.—First and Second, G. W. Boothby.

THREE PAIRS OF COMMON PIGEONS.—Prize, W. Elger, Wold Newton.

CRYSTAL PALACE POULTRY SHOW.

ALTHOUGH poultry is not popular with gardeners, yet there is a sort of affinity, and those who like one are generally well disposed to the other. Many know to their cost that birds like gardens, and, if Gold and Silver Pheasants or other fancy birds are kept, their cages are generally placed among the shrubs or flowers.

Our amusements are going ahead, and by the help of railways, the increase of parks, and the judicious introduction of walks bordered by shrubs and beautiful flowers, the Londoners are no longer obliged to sigh in vain for the sight of something more refreshing than hot streets and grotesque chimney-pots. There is, however, another natural want, and that is, the sight of the animals that are familiar with country life. Thus the Smithfield Club can always depend on a large attendance at Christmas. Half those who go to see the animals are not connoisseurs, but it is in the tradition of every family that even if all its members are resident in London they came from the country. They have visited distant relations in far-off counties, and the grey-headed man can recollect the delight with which he first saw the mysteries of milking and ploughing, and the eager morning search that should produce the eggs for his breakfast. These were seasons of rest to the body and of refreshment for the mind, and the remembrance of them is as of a halcyon time, when everything was *couleur de rose*.

We, and thousands more, thank the Crystal Palace Company for the treat they have provided for us at so little cost. It is more than a treat to leave the dusty streets and find ourselves in beautiful gardens, surrounded by everything that is lovely in nature, increased by the help of consummate art. Another great advantage is the facility of access and the small expense. This enables a man to take his whole family. Many people in London have little idea of the varied tribes and breeds of poultry, and they are amazed to see the distinctness of each particular class as it is portrayed in an Exhibition like this. They return clever in all the varieties, and many in the course of their walk round fix in their minds the breed they will keep when they are able to keep any. Rabbits and pigeons seem to be the especial pets of the rising generation, such of them as are perforce dwellers in towns. They cannot hope to get space for fowls, but there is room in a very small yard for a rabbit-hutch, and the same space will serve for a pair of pigeons. In our walks round we gather these facts, and we cannot help allowing ourselves a little space to make them public. Such occasions are essentially visits of pleasure to us; they make us younger for a time; and while the glow of pleasure remains we try to strike a sympathetic chord in some, and to awaken it in others.

As the Show is still open while these pages are in the hands of our readers it will be understood that many of our accustomed comments must be deferred till next week. The subjoined prize-list will give all details as to the winners. If we were asked to point out the best classes we should name the Dorkings, Black-breasted Game, Silver-pencilled Hamburgs, Brahma Pootras, and Malays. The last-named class was unusually good; indeed, it may be said of the last two that they proved, where prizes are offered for them, their

owners will enter birds that are ornaments to any show. All the poultry was hatched this year.

Judges of Poultry, Messrs. Andrews and Baily; *of Pigeons*, Messrs. Bellamy and Walstenholme; *of Rabbits*, Messrs. Fox, Howsden, and Webster.

SPANISH.—First, Mr. J. R. Rodbard, Aldwick Court, near Bristol. Second, Mr. P. H. Jones, Fulham. Third, Miss E. Watts, Monk Barnes, Hampstead. Fourth, Mr. E. Roberts, Oldham Road, Manchester. Highly Commended, Mr. R. W. Fielden, Bonchurch, Isle of Wight. Commended, Mr. J. G. Yell, Chelmsford.

SPANISH COCKS.—First, Mr. T. Sheen, Holborn Hill. Second, Mr. J. R. Rodbard, Aldwick Court. Third, Sir J. Paxton, M.P., Rockhills, Sydenham. Highly Commended, Mr. J. K. Fowler, Prebendal Farm, Aylesbury.

DORKING (Coloured).—First, Rev. S. Donne, Oswestry. Second, Capt. W. Hornby, R.N., Knowsley Cottage, Prescott. Third, Mr. C. H. Wakefield, Malvern Wells, Worcestershire. Fourth, Mr. W. Moore, Hanley Castle, Upton-on-Severn. Highly Commended, Mr. E. Archer, Malvern; Mr. G. Botham, Wexham Court, Slough; Mr. W. Evans, Hurst House, Prescott; Mr. J. Frost, Parham, Woodbridge; Mr. S. Lewry, Ashington, Steyning.

DORKING (White).—First, Mr. H. Lingwood, Needham Market, Suffolk. Second, Capt. Beardmore, Uplands, Fareham.

DORKING COCKS (Coloured and White).—First and Second, Mrs. St. John, Oakley, Basingstoke. Third, Mr. S. Lewry, Ashington, Steyning.

COCHIN-CHINA (Cinnamon and Buff).—First, Mr. T. Stretch, Bootle, Liverpool. Second, Mr. J. W. Kelleway, Ryde, Isle of Wight. Third, Mr. J. K. Fowler, Aylesbury. Highly Commended, Rev. J. E. Yonge, Eton. Commended, Mrs. H. Fookes, Whitechurch, Blandford. (A good class.)

COCHIN-CHINA (Brown and Partridge-feathered).—First and Second, Rev. G. F. Hodson, North Petherton, Somerset. Third, Mr. J. K. Fowler, Aylesbury.

COCHIN-CHINA (White).—First, Mr. J. K. Fowler, Aylesbury. Second, Mrs. E. Herbert, Powick, Worcester. Highly Commended, Sir J. Paxton, M.P., Rockhills, Sydenham; Mr. J. Weston, Oxford Road, Aylesbury. Commended, Mr. A. Peters, Fratton, Portsmouth. (A good class.)

COCHIN-CHINA COCKS (Coloured and White).—First, Mr. T. Stretch, Bootle, Liverpool. Second, Mr. H. Loe, jun., Appuldurcombe, Godshill. Highly Commended, Mrs. Robinson, Mansfield, Woodhouse, Notts.

BRAHMA POOTRA.—First and Second, Mr. G. Botham, Wexham Court, Slough. Highly Commended, Mr. J. F. Chater, Haverhill, Suffolk; Mr. J. H. Craigie, Park Cottage, Greenhithe; Miss Crawshaw, Caversham Park; Mrs. E. Shepherd, Howard Lodge, Upper Tulse Hill. Commended, Mr. P. H. Jones, Fulham. (Universally good class.)

BRAHMA POOTRA COCKS.—First, Mr. J. K. Fowler, Prebendal Farm, Aylesbury. Second, Mr. G. Lamb, Tettenhall Wood, near Wolverhampton.

GAME FOWLS (White and Piles).—First, Mr. N. M. de Rothschild, Gunnersbury Park, Acton. Second, Mr. C. R. Titterton, Birmingham. Third, Mr. S. Matthew, Chilton Hall, Stowmarket. Highly Commended, Rev. T. E. Abraham, Bickerstaffe, Ormskirk.

GAME FOWL (Black-breasted and other Reds).—First, R. R. Sewell, M.D., Bridgewater, Somerset. Second, Mr. W. Cox, Brailsford Hall, Derby. Third, Mr. J. Doncaster, Maplebeck, Newark. Highly Commended, Hon. W. W. Vernon, Wolseley Hall, Rugeley; Mr. E. W. Haslewood, Bridgenorth, Shropshire; Mr. S. Matthew, Stowmarket, Suffolk; Mr. N. M. de Rothschild, Gunnersbury Park, Acton. (A most excellent class.)

GAME FOWL (Blacks and Brassy-winged except Greys).—First, Mr. W. M. Marriott, Boothroyd, Dewsbury. Second, Mr. W. J. Bentley, Wellington, Salop. Third, Rev. T. E. Abraham, Bickerstaffe, Ormskirk.

GAME FOWL (Duckwings and other Greys and Blues).—First, Mr. W. M. Marriott, Boothroyd, Dewsbury. Second, Mr. C. R. Titterton, Birmingham. Third, Mrs. H. Sharp, Bradford, Yorkshire.

GAME COCKS.—First, Mr. W. Cox, Brailsford Hall, Derby. Second, Mrs. H. Sharp, Bradford, Yorkshire. Third, Mr. N. M. de Rothschild, Gunnersbury Park, Acton. Highly Commended, Rev. C. Gilbert, Hemsby, Great Yarmouth; Mr. N. N. Dyer, Bredon, Tewkesbury.

HAMBURGH (Gold-pencilled).—First, Mr. W. Ludlam, Bradford, Yorkshire. Second and Third, Mr. R. R. Clayton, Hedgerley Park, Slough. Highly Commended, Mrs. Pettat, Ashe Rectory, Basingstoke; Mrs. H. Sharp, Bradford, Yorkshire. Commended, Rev. T. L. Fellowes, Beighton Rectory, Acle; Miss E. Wright, New Road, Windsor. (An excellent class.)

HAMBURGH (Silver-pencilled).—First and Third, Mr. E. Archer, Malvern. Second, Mr. G. Botham, Wexham Court. Highly Commended, Hon. W. W. Vernon, Wolseley Hall, Rugeley. Commended, Rev. F. B. Pryor, Bennington Rectory, Stevenage. Commended, Mrs. H. Sharp, Bradford, Yorkshire. (An excellent class.)

HAMBURGH COCKS (Gold or Silver-pencilled).—First, Mrs. H. Sharp, Bradford, Yorkshire. Second, Mr. W. Cox, Brailsford Hall, Derby. Highly Commended, Mr. E. Archer, Malvern; Mr. G. Botham, Wexham Court, Slough.

HAMBURGH (Gold-spangled).—First and Second, Mr. H. Thompson, Market Street, Windsor. Third, Mr. G. Brook, East Parade, Huddersfield. Commended, Rev. T. L. Fellowes, Beighton Rectory, Acle.

HAMBURGH (Silver-spangled).—First, Mr. H. Carter, Holmfirth, near Huddersfield. Second, Mr. J. Newick, Hinton St. George, Ilminster. Third, Messrs. Bird and Beldon, Eccleshill Moor, Bradford, Yorkshire.

HAMBURGH COCKS (Gold or Silver-spangled).—First, Mr. H. Thompson, Market Street, Windsor. Second, Mr. G. C. Adkins, Edgbaston, near Birmingham.

POLISH FOWL (Black with White Crests).—First and Second, Mr. G. S. Fox, Wellington, Somerset. Third, Mr. H. Loe, jun., Appuldurcombe, Isle of Wight. Commended, Mr. T. Battye, Holmbridge, near Huddersfield. (A good class.)

POLISH FOWL (Gold).—Second, Mrs. Pettat, Ashe Rectory, near Basingstoke. (First and Third Prizes withheld.)

POLISH FOWL (Silver).—First, Mr. P. H. Jones, High Street, Fulham. Second and Third, Mr. G. C. Adkins, West House, Edgbaston. Commended, Mr. P. H. Jones, High Street, Fulham. (A good class.)

POLISH COCKS.—First, withheld. Second, Mr. G. C. Adkins, West House, Edgbaston, near Birmingham.

MALAY.—First, Mr. J. J. Fox, Devizes. Second, Mr. W. Manfield, Dorchester. Highly Commended, Mr. C. Ballance, 5, Mount Terrace, Taunton, Somersetshire; Miss E. Saunders, 12, Portman Terrace, Globe Road, Mile End. Commended, Mr. J. Rumsey, 182, High Street, Shadwell. (An unusually good class.)

FOR ANY OTHER DISTINCT BREED.—First, the Hon. W. W. Vernon, Wolseley Hall, Rugeley (Silkies). Second, Mr. A. Watkin, Freedom Cottage, Walkley, near Sheffield (Sultan). Commended, Mr. C. Coles, Fareham, Hants (Andalusian).

BANTAMS (Gold-laced).—First, Mr. U. Spary, Markgate Street, Herts. Second, Mrs. Green, Lower Cheam, Surrey. Highly Commended, Mr. T. H. D. Bayley, Ickwell House, near Biggleswade; Miss Bridges, Bridge Cottage, Croydon.

BANTAMS (Silver-laced).—First, Mr. M. Leno, jun., Harpenden, near St. Alban's. Second, Mr. J. Bradwell, Southwell, Notts.

BANTAMS (White).—First, Mr. W. Elkington, Lichfield. Second, Mr. W. S. Smith, Montem Cottage, Slough, Bucks.

BANTAMS (Black).—First, Mr. J. Monsey, Thorne Lane, Norwich. Second, Mr. W. H. Holmes, Bridgewater. Commended, Mr. W. H. Holmes, Bridgewater; Mr. M. Ridgeway, Dewsbury. (A very good class.)

BANTAMS (any other variety).—First and Second, the Hon. W. W. Vernon, Wolseley Hall, Rugeley. Highly Commended, Mr. J. Camm, Farnsfield, Southwell, Notts; Mr. W. S. Forrest, Eagle Cliff, Greenhithe, Kent; Mr. E. Stansfield, Dewsbury. (This class deserves a general high commendation.)

GESE (White).—First, Mr. W. Manfield, Dorchester, Dorset. Second, Mr. J. K. Fowler, Prebendal Farm, Aylesbury. Highly Commended, Mr. B. H. Brooksbank, Tickhill, Rotherham; Mr. T. Williams, 7, Broad Street, Reading.

GESE (Grey and Mottled).—First, Mrs. H. Fookes, Whitechurch, Blandford. Second, Mr. H. G. Lloyd, Manor House, Abbot's Leigh, near Bristol.

DUCKS (White Aylesbury).—First, Mr. J. Weston, Oxford Road, Aylesbury, Bucks. Second, Mr. J. K. Fowler, Prebendal Farm, Aylesbury. Highly Commended, Mr. J. K. Fowler, Prebendal Farm, Aylesbury; Mr. J. Weston, Oxford Road, Aylesbury, Bucks.

DUCKS (Rouen).—First, Mrs. Parkinson, Knapthorpe, Newark. Second, Mr. J. K. Fowler, Prebendal Farm, Aylesbury. Highly Commended, Mrs. H. Fookes, Whitechurch, Blandford; Mr. J. Weston, Oxford Road, Aylesbury. Commended, Mr. B. H. Brooksbank, Tickhill, Rotherham.

DUCKS (any other variety).—First, Mr. F. W. Earle, Edenhurst, Prescott, Lancashire (Buenos Ayres). Second, Miss M. M. Spencer, South Bemfleet, near Rayleigh, Essex (Wild). Highly Commended, Mr. J. Marshall, Taunton (Black East Indian); the Hon. W. W. Vernon, Wolseley Hall, Rugeley (Buenos Ayres). Commended, the Rev. F. R. Pryor, Bennington Rectory, Stevenage, Herts (Black East Indian).

TURKEYS.—First, Miss Crawshaw, Caversham Park (Cambridgeshire). Second, Rev. T. L. Fellowes, Beighton Rectory, Acle, Norfolk (Cambridgeshire).

PIGEONS.

POWTERS OR CROPPERS.—*Yellow Cocks.*—No prize awarded. *Blue Cocks.*—Prize withheld. *Blue Hens.*—Prize, Mr. S. Summerhayes, Fore Street, Taunton. *Red Cocks.*—Prize, Mr. J. G. Yell, Chelmsford. *Red Hens.*—Prize, Mr. G. C. Adkins, West House, Edgbaston, Birmingham. *White Cocks.*—Prize, Mr. T. Bridges, Bridge Cottage, Croydon. *White Hens.*—Prize, Mr. T. Bridges, Bridge Cottage, Croydon.

CARRIERS.—*Black Cocks.*—Prize, Mr. F. C. Esquilant, 346, Oxford Street. Prize, Mr. B. Newberry, Compton, near Plymouth. *Black Hens.*—Prize, Hon. W. W. Vernon, Wolseley Hall, Rugeley. Prize, Mr. W. F. Cross, 3, Oak Terrace, Battersea. *Dun Cocks.*—Prize, Mr. W. F. Cross, 3, Oak Terrace, Battersea. Prize, Mr. J. F. Mortimer, Mill Street, Plymouth. Prize, Mr. J. G. Yell, Chelmsford. *Dun Hens.*—Prize, Mr. C. W. Burningham, 142, Edgware Road. Prize, Mr. E. R. Maddeford, Staines, Middlesex. Prize, Mr. S. Summerhayes, Fore Street, Taunton. *Blue Cocks.*—Prize, Mr. J. R. Holmes, High Road, Lewisham. *Blue Hens.*—Prize, Mr. J. Deakin, 114, Green Lane, Sheffield. Prize, Mr. J. R. Holmes, High Road, Lewisham. *White Cocks.*—Prize, Mr. S. Summerhayes, Fore Street, Taunton. *White Hens.*—Prize, Mr. W. F. Cross, 3, Oak Terrace, Battersea.

DRAGONS.—*Black.*—Prize, Mr. F. A. Lavender, Biddenham, near Bedford. *Blue.*—Prize, Mr. C. W. Burningham, 142, Edgware Road. Prize, Mr. J. Davey, 8, Park-place Terrace, Paddington. Prize, Mr. F. C. Esquilant, 346, Oxford Street. Prize, Mr. F. A. Lavender, Biddenham, near Bedford. *Red.*—Prize, Mr. S. Summerhayes, Fore Street, Taunton. *Yellow.*—Prize, Mr. S. Summerhayes, Fore Street, Taunton. *White.*—Prize, Mr. G. C. Adkins, West House, Edgbaston, near Birmingham.

ALMOND TUMBLERS.—Prize, Mr. G. C. Adkins, West House, Edgbaston, near Birmingham. Prize, Mr. E. R. Maddeford, Staines, Middlesex. Prize, Mr. J. Thomas, 10, Denmark Street, Camberwell.

SHORT-FACED MOTTLES.—*Black.*—Prize, Mr. F. C. Esquilant, 346, Oxford Street.

SHORT-FACED BALDHEADS.—*Black.*—No prize awarded; the Short-faced not deserving, and the others long-faced. *Blue.*—Prize, Mr. H. Weir, 11, Lyndhurst Villas, Lyndhurst Road, Peckham. *Red.*—No prize awarded. *Silver.*—Prize, Mr. H. Weir, 11, Lyndhurst Villas, Lyndhurst Road, Peckham. *Yellow.*—Prize, Mr. J. W. Edge, Aston New Town, Birmingham. Prize, Mr. H. Weir, 11, Lyndhurst Villas, Lyndhurst Road, Peckham.

SHORT-FACED BEARDS.—*Blue.*—Prize, Mr. J. Thomas, 10, Denmark Street, Camberwell. *Silver.*—Prize, Mr. F. C. Esquilant, 346, Oxford Street. *Yellow.*—Prize, Mr. F. C. Esquilant, 346, Oxford Street.

SHORT-FACED TUMBLERS.—*Black.*—Prize, Mr. E. R. Maddeford, Staines, Middlesex. *Blue.*—Prize, Mr. J. Thomas, 10, Denmark Street, Camberwell. *Red.*—Prize, Mr. J. Percivall, 13, Queen's Row, Walworth. *Silver.*—No prize awarded.

JACOBSINS.—*Black.*—Prize, Mr. H. Weir, 11, Lyndhurst Villas, Lyndhurst Road, Peckham. *Red.*—Prize, Mr. H. Weir, 11, Lyndhurst Villas, Lyndhurst Road, Peckham. *Yellow.*—Prize, Mr. G. C. Adkins, West House, Edgbaston.

OWLS.—*Blue.*—Prize, Mr. G. C. Adkins, West House, Edgbaston, near Birmingham. Prize, Mr. J. Thomas, 10, Denmark Street, Camberwell. *Silver.*—No prize awarded. *White.*—No prize awarded. *Yellow.*—Prize, Mr. S. Summerhayes, Fore Street, Taunton.

NUNS.—*Black.*—Prize, Mr. H. Morris, Perry Vale, Forest Hill. *Red.*—Prize, Mr. J. G. Yell, Chelmsford. *Yellow.*—No prize awarded.

TURBITS.—*Red.*—Prize, Mr. E. R. Maddeford, Staines. *Yellow.*—Prize, Mr. E. R. Maddeford, Staines. *Blue.*—Prize, Mr. H. Morris, Perry Vale, Forest Hill.

FANTAILS.—*Black.*—Prize, Mr. G. C. Adkins, West House, Edgbaston. *Blue.*—Prize, Mr. G. C. Adkins, West House, Edgbaston. *White.*—Prize, Mr. G. C. Adkins, West House, Edgbaston. Prize, Mr. H. Simpson, Swan Street, Kettering, Northamptonshire.

BARBS.—*Black.*—Prize, Mr. G. C. Adkins, West House, Edgbaston. *Red.*—Prize, Mr. J. G. Yell, Chelmsford. *White.*—Prize, Mr. H. Weir, 11, Lyndhurst Villas, Lyndhurst Road, Peckham. *Yellow.*—Prize, Mr. H. Weir, 11, Lyndhurst Villas, Lyndhurst Road, Peckham.

MAGPIES.—*Yellow.*—Prize, Mr. J. G. Yell, Chelmsford. *Black.*—Prize, Mr. J. G. Yell, Chelmsford. *Red.*—Prize, Miss Elliot, Osborne House, Taunton.

TRUMPETERS.—Prize, Mr. J. G. Yell, Chelmsford.

LARGE SPANISH RUNTS.—Prize, Mr. J. T. Stainton, Horsell, near Woking.

LARGE LEGHORN RUNTS.—Prize, Mr. H. Child, jun., Sherbourne Road, Birmingham.

PORCELAIN.—Prize, Miss Elliot, Osborne House, Taunton.

ANY OTHER VARIETY.—Prize, Mr. G. C. Adkins, West House, Edgbaston (Australian). Prize, Mr. H. Gilbert, 17, Upper Phillimore Place, Kensington (Fring-backs). Prize, Mr. J. Percivall, 13, Queen's Row, Walworth (Blue Swallows). Prize, Mr. S. Summerhayes, Fore Street, Taunton (Half Moons). Prize, Mr. J. Thomas, 10, Denmark Street, Camberwell (Silver Mealy Owls). Prize, Mr. H. Weir, 11, Lyndhurst Villas, Lyndhurst Road, Peckham (Black Meeves).

RABBITS.

FOR LONGEST EARS.—First, Mr. J. Haile, 11, Wood Street, Milbank, Westminster. Second, Mr. W. Brewer, 10, Prescott Place, Burrage Road, Woolwich.

BLACK AND WHITE.—First, Mr. J. Lawrence, Garbett Street, Birmingham. Second, Mr. G. Mills, 9, Sand Hill, Plumstead, Kent. Highly Commended, Mr. C. Mayston, Lower Clapton. Commended, Mr. H. Dixon, jun., 71, Ashburnham Grove, Greenwich.

YELLOW AND WHITE.—First, Mr. G. Mills, 9, Sand Hill, Plumstead, Kent. Second, Mr. A. Palmer, 14, Keppel Street, Brompton. Highly Commended, Mr. N. Norman, Bull Fields, Plumstead.

TORTOISESHELL.—First, Mr. J. Haile, 11, Wood Street, Milbank, Westminster. Second, Mr. H. Dixon, jun., 71, Ashburnham Grove, Greenwich.

BLUE AND WHITE.—First and Second, Mr. N. Norman, Bull Fields, Plumstead. Commended, Mr. C. F. Pentecost, 3, Church Street, Kensington.

GREY AND WHITE.—First, Mr. W. Roffey, 6, Albert Street, Woolwich. Second, Mr. T. Pinchbeck, Great King Street, Hockley, Birmingham.

SELF COLOUR.—First, Mr. H. Child, jun., Sherbourne Road, Birmingham. Second, Mr. G. Lewis, 38, Lansdale Road, Westbourne Grove, Paddington. Highly Commended, Mr. J. Haile, 11, Wood Street, Milbank, Westminster.

FOR WEIGHT.—First, Mr. G. Jones, 4, Lees Lane, near Bell Street, Birmingham. Second, Mr. C. Sellen, 231, Rotherhithe Street, Rotherhithe.

FOREIGN RABBITS.—Mr. A. Dixon, King's Road, Clapham Park (French Butterfly Smut). Second, Master H. Moore, Doncaster (White Angora).

OUR LETTER BOX.

ANERLEY POULTRY SHOW.—We hasten to correct the statement that Messrs. Crowley had any connection with the Anerley Poultry Show. It is a clerk of Messrs. Calvert who was Secretary of that Exhibition.

POULTRY JUDGES (Justice).—You will see what we have said to-day. There are considerations which render it desirable to close the subject.

DISEASED PIGEONS (E. B. R.).—“Can you tell me what causes young Pigeons that can fly to be found on the dovecot floor with their feet and toes covered with large fleshy warts, and also under the eyes and on the wings? and what is the remedy for it? The dovecot is in a kitchen garden.”

[I consider the disease a very bad case of canker. This disease arises from a bad state of blood, and is very infectious. Its origin is variously attributed, as to drinking dirty water, being fed on the floor of the dovecot, so as to cause them to pick up some of their own dung with the food, drinking from a tin vessel, damp or dirty lodging, and want of salt or green food. Your correspondent will be able to tell if either of these causes may have affected his Pigeons. I should advise a thorough cleaning of the dovecot, and lime-washing the same, and to kill all the affected birds. The disease usually shows itself first in the mouth, particularly in young birds, and is very offensive in smell. If any valuable birds are affected which it is desirable to cure they should at once be removed from the others, kept very clean, and fed on nourishing food. Remove the lumps of pus with a wooden spatula, wash the affected parts clean, and apply caustic liberally. By this means I have cured many. Care should be taken to supply the others at liberty with clean water and a change of wholesome food till the disease is eradicated.—B. P. BRENT.]

LONDON MARKETS.—AUGUST 10TH.

COVENT GARDEN.

An excellent supply of both Fruit and Vegetables, fully equal to suit the terms of all classes of buyers, which have been numerous during this real summer weather. Importations comprise *Greengages*, *Orleans* and *Precocoe de Tours Plums*, *Endive*, *Artichokes*, and *Tomatoes*; and several cargoes of *West India Pines*, sometimes 40,000 a day, have changed hands at the brokers during the past fortnight, the season for which, however, will soon be over.

FRUIT.

Apples, ktn., per bush.	4s. 0d. to 6s.
„ dessert, do ..	6s. „ 8s.
Pears, dessert, per sieve	5s. „ 8s.
Pines, English, per lb.	4s. „ 6s.
„ Foreign, each 9d.	to 2s. 6d.
Grapes, per lb.	2s. „ 6s.
Peaches, per doz.	8s. „ 15s.
Nectarines, do.	5s. „ 12s.
Strawberries, per punnet	1s. „ 0s.
„ Foreign, none	
Melons, English	3s. „ 6s.
„ Foreign	2s. „ 4s.
Cherries, dessert	1s. „ 3s.
„ Morellos ..	6d. „ 1s. 6d.
Oranges, per 100	10s. „ 15s.
„ Tangerine, none	
„ Seville, do.	0s. „ 0s.
Lemons, per 100	8s. „ 12s.
Almonds, per lb.	3s. „ 0s.
Nuts, Filberts, per lb.	1s. „ 0s.
„ Cobs, per lb.	0s. „ 0s.
„ Barcelona, per	
bushel	0s. „ 0s.
Nuts, Brazil, do.....	12s. „ 0s.
Walnuts, Green, per 1000	10s. „ 0s.
Chestnuts, per bush., none	

VEGETABLES.

Cabbages, per doz...	6d. to 1s. 0d.
„ Red, each	0d. to 0d.
Cauliflowers, per doz...	4s. „ 6s.
Broccoli, per doz. ..	6d. to 1s. 0d.
Greens, per doz.	1s. 0d. „ 2s. 0d.
Spinach, per sieve 3s. 6d.	„ 0s. 0d.
French Beans, do.	2s. to 3s.
Carrots, per bunch	7d. „ 0d.

Parsnips, do.	6d. to 0d.
Cucumbers, each.....	3d. „ 1s.
Beet, per doz.	9d. to 1s. 6d.
Potatoes, new, per cwt.	5s. to 10s.
Onions, per dozen	
bunches	3s. „ 4s.
Turnips, per bunch ..	6d. „ 0d.
Leeks, per bunch	2d. „ 3d.
Garlic, per lb.	6d. „ 8d.
Horseradish, per	
bundle	2s. „ 4s.
Shallots, per lb.	6d. „ 8d.
Lettuce, Cos, per score	6d. „ 1s.
„ Cabbage, do. do.	6d. „ 9d.
Endive, do. do.....	— „ 4d.
Celery, per bunch ..	9d. to 1s. 6d.
Radishes, Turnip, per	
dozen bunches	— „ 1s.
Ditto, long, per hund..	— „ 6d.
Water Cresses, per doz.	9d. „ 1s.
Small Salad, per	
punnet	2d. „ 3d.
Artichokes, per lb. ..	— „ 2d.
Asparagus, p. bundle	1s. 6d. „ 4s.
Sea-kale, none.	
Rhubarb, per bundle	4d. „ 0d.
Cucumbers, each	3d. „ 8d.
Mushrooms, per pottle	2s. „ 3s.

HERBS.

Basil, per bunch	4d. to 6d.
Marjoram, per bunch	4d. „ 6d.
Fennel, per bunch ..	2d. „ 3d.
Savory, per bunch ..	2d. „ 3d.
Thyme, per bunch ..	2d. „ 3d.
Parsley, per bunch ..	2d. „ 3d.
Mint, per bunch	2d. „ 4d.
Green Mint	6d. „ 8d.


POULTRY.

Harvest time tells on the markets, and corn being for the time more important than poultry, the supply is short. A slight rise in prices is the consequence.

Large fowls. . 5s. 6d. to 6s. 0d. each.	Guinea Fowls 0s. 0d. to 0s. 0d. each.
Smaller do. 4s. 0d. to 4s. 6d. „	Pigeons
Chickens .. 2s. 6d. to 3s. 0d. „	8d. to 9d. „
Geese	Rabbits.... 1s. 5d. to 1s. 6d. „
6s. to 6s. 6d. „	Wild ditto
Ducks..... 3s. 0d. to 3s. 3d. „	8d. to 9d. „
	Leverets.... 3s. 6d. to 4s. 0d. „

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—August 11, 1857.

WEEKLY CALENDAR.

D M	D W	AUGUST 18—24, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
18	TU	All-heal (Stachys).	29.430—29.406	62—52	N.E.	—	52 a. 4	15 a. 7	2 45	28	3 37	230
19	W	Fluellin (Antirrhinum).	29.619—29.426	67—55	N.E.	29	53	13	sets.		3 23	231
20	TH	Fumitory (Fumaria).	29.533—29.316	67—56	S.E.	45	55	11	7 a 38	1	3 9	232
21	F	Sea-Pea (Pisum maritimum).	29.400—29.255	68—49	S.	24	57	9	7 49	2	2 55	233
22	S	Sea-Cotton (Santolina).	29.984—29.574	68—39	N.	—	58	7	8 0	3	2 40	234
23	SUN	11 SUNDAY AFTER TRINITY.	30.128—30.085	66—46	—	—	v	5	8 9	4	2 25	235
24	M	St. BARTHOLOMEW.	30.090—30.040	69—54	S.W.	02	1	3	8 20	5	2 9	236

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 72.1°, and 50.5°, respectively. The greatest heat, 92°, occurred on the 18th, in 1842; and the lowest cold, 32°, on the 21st, in 1850. During the period 103 days were fine, and on 93 rain fell.

THE Annual Meeting of the BRITISH POMOLOGICAL SOCIETY was held on Thursday the 6th inst. at the rooms in St. Martin's Hall, Long Acre, Mr. Hogg, Vice-President, in the chair.

The Meeting was well attended, and there were many subjects of interest submitted for observation, but this being the Annual Meeting the first business of the day was the election of office-bearers for the year and the revision of the rules. The office-bearers were all elected as formerly, to whom were added Mr. Fraser, of Lea Bridge Road, and Mr. Thomas Moore, of Chelsea Botanic Gardens, as Auditors. The rules remain unaltered.

The first subjects submitted to the Meeting were two seedling Melons, one from Mr. Elphinstone, of Flexton Hall, Norfolk, called *Elphinstone's Hybrid Melon*; and the other from — Wintle, Esq., of Gloucester, and said to be a seedling raised from *Trentham Hybrid*. The former is a very large, oval, greenish white, and netted fruit, with a white flesh, which is remarkably tender, ripening close up to the rind, and very melting, juicy, and sugary. It was highly approved by all the members present, and was considered to be a variety well worthy of cultivation. The specimen from Mr. Wintle was evidently the same as *Trentham Hybrid*, none of the gentlemen present being able to detect any points of difference. It had been too long cut, and had begun to decay on the inside; but the flesh towards the rind exhibited qualities which led some to think it was a good Melon.

Mr. Rivers, of Sawbridgeworth, sent specimens of the fruit of what he called *Gros de Maroc Grape*. It was hardly ripe, but the berries were of good size, thick-skinned, and black. There were no particulars sent along with it further than that the fruit had been produced in a house heated artificially, and that Mr. Rivers introduced the variety from France. It is, however, the *Damas Bleu*, *Gros Damas*, *Merbregie*, or *Gros Maroc*, a variety grown in the south of France, but which even there requires to be grown against a wall or as an espalier. It is esteemed an excellent fruit, with a bunch from eight to ten inches long, and large, oval, thick-skinned berries. The wood is long-jointed, and the leaves cottony underneath.

From Her Majesty's garden at Frogmore, specimens of a seedling Apricot were sent, called *Frogmore Apricot*, which proved to be identical with the *Moorpark*, being one more of numerous instances of that variety being reproduced from seed. From the same garden fruit of the *Black Apricot* was received. This is like

an ordinary Apricot in size, but is quite dark like a Plum, and the flesh is pale red, but darker near the stone, and quite worthless to eat. The tree producing this fruit is known as *Prunus dasycarpa* or *Armeniaca dasycarpa*. Specimens of the same were sent also by Mr. Kinghorn, nurseryman, Richmond.

Mr. Lane, of Berkhamstead, sent several very nice specimens of Peaches and Nectarines which had been ripened in a house without heat, and on plants grown in pots. The plants were put into the fruit-house about Christmas, and no artificial heat had been used. The varieties were *Royal George* and *Royal Charlotte*, both excellent, but rather more flavour in the latter; *Sulhamstead*, a variety raised from the *Noblesse*, to which it bears a close resemblance in the fruit, but it is a much more healthy tree, and less subject to mildew; and *Barrington*, also very excellent, with its usual sprightly flavour. The Nectarines were *Impératrice*, inferior as usual; *Elruge*, very fine; and *Early Newington*, a cling-stone, but of good flavour. Mr. Rivers also sent specimens of two seedling Nectarines raised from *Stanwick Nectarine*. They were severally marked No. 3. and No. 4. The former is oval, and the latter round, and both were of the same flavour. The flavour is remarkable, and must be tasted to be appreciated. They are quite equal to the old *Stanwick*, and they are said not to crack in ripening as the parent does. These fruits were produced in a house under the influence of fire heat; but if they should be found to ripen out of doors, which the parent, except under favourable circumstances, will not do, they will prove a valuable acquisition.

Mr. Kinghorn, nurseryman, Richmond, had a dish of a fine large black Cherry, which he called *St. Margaret's Cherry*, but which we recognised as being the *Tradescant's Black Heart*, a very old, but very fine variety, now too little cultivated.

A Cherry called *Frogmore Morello* was sent from the royal gardens, and was said to be remarkable from producing its fruit on spurs as well as on the young wood. The fruit was considered to be of the same character as the old *Morello*; but the Meeting did not seem inclined to recommend it as a novelty without having more information, and further opportunities of judging whether its spur-bearing character was sufficiently constant and general to recommend this new variety as an improvement on its parent.

Mr. Adams, nurseryman, Brentford, exhibited specimens of *Büttner's Yellow Cherry*, a small, firm-fleshed,

sweet, and nicely-flavoured variety of the Bigarreau character. It is a great bearer, and the fruit will hang till the end of August or beginning of September, when it furnishes a dish which makes a nice variety in the dessert. He also sent fruit of the *White Warrington Gooseberry*, which was obtained from a branch of a Red Warrington bush which sported, and which has for many years remained constant. It has all the character and merits of the Red Warrington except the colour. *Knight's Sweet Red Currant*, *Wilmott's Long Red*, and the *Red Champagne* came from the same nursery, as well as a seedling variety of *Black Currant*, which was perfectly sweet, but the fruit being small the Meeting deferred its opinion till another season.

Messrs. May and Co., seedsmen, of Wellington Street, Strand, exhibited a collection of *Gooseberries* remarkable for their size.

Mr. Small, of Colnbrook Nursery, near Slough, was elected a member of the Society.

The next Meeting will be held on Thursday, the 1st of September; and on Saturday, the 12th of September, there will be a very interesting Meeting on the occasion of the competition of seedling Grapes, when three prizes of *Two Guineas* each will be awarded for the best varieties in each of the classes named. We would commend this Society and its Meetings to the notice of the public. We know of few places where two or three hours can be spent more profitably and instructively. The whole proceedings are of a thoroughly practical description, and what with the interchange of ideas and his own observation, if a man does not go away wiser than he came it is his own fault.

POTATOES, THEIR DISEASE AND THEIR PRESENT POSITION.

WE have now had an annual visitation of the Potato disease for twelve years, it having commenced in 1845. I believe I may very fairly take credit for being one of the first in this kingdom to announce its disastrous character, and to offer advice as to future proceedings connected with the virulent character of this disease; and I well remember addressing a letter to the *Chester Courant* on the subject at the end of August in that year, advising Cheshire farmers not to leave their Potatoes too long in the soil after the stems had begun to blacken. This letter attracted a good deal of attention at the time, not so much from the weight of the facts contained therein as from the somewhat novel appearance of the caution, to say little of prophetic views concerning it; the latter bold enough to be sure, but since verified to the very letter. But the question soon became much widened; from all points of the compass came grievous statements, and a host of conflicting opinions as to the cause of the disease and remedial measures. That its presence was in part caused or accelerated by certain atmospheric conditions I did not doubt, and I urged strongly this view of the question; but that the primary cause was of a different character, and traceable to a course of management inimical to the nature and constitution of the plant, I also believed, and urged in equally strong terms.

Now arose a most chaotic conflict of opinions as to whether the *Botrytis infestans*, or fungus which invested the body of the plant, was a cause or a mere consequence,

and this I believe has not yet been finally settled. Persons who took the liberty of directing public attention to the rapid devastations of the fungus on the foliage of the plants were denounced in an off-hand way by some would-be philosophers as most illogical persons, floundering between cause and effect, unable to distinguish. Thus the battle raged, and I shall be glad to hear if any gentleman of the year 1857, after a lapse of twelve years, can throw much further light on this puzzling subject.

I remember urging at the time that by some unknown means, the foliage becoming suddenly tainted, a kind of vegetable gangrene instantly supervened, which, as all know, spread with astounding rapidity, and that this gangrene corrupted the whole system of the plant, descending by means of the returning fluids, now perverted, into the very tubers. The latter position, I am of opinion, cannot even now be fairly disputed, and until I can meet with a sufficiently convincing argument to the contrary I must continue to hold my ground.

Since I am busy laying claim to a fair share of foresight in this matter I must beg to name another little thing in connection with it. I ventured at that time to suggest that it was a kind of vegetable dyspepsia, and that, having been years accumulating, it could not be expected to depart in a hurry, but that its departure would be the work of years. How far this has been verified I leave our readers to judge.

We have our usual return of this disease after an annual occurrence of twelve years, and in these parts with a considerable amount of virulence. It has commenced much about the usual time, and spreads as formerly; but at present certainly it has not the aggravated character of the years 1846—7. There has been, as we know, much speculation as to both the original cause and the continuance of this national calamity, and, albeit the public is well nigh tired of the discussion, I must beg once more to be heard concerning it.

The two principal and most probable causes hitherto pointed at are, firstly, an unnatural amount of fermentation in the pits or heaps, and secondly, over cultivation, to which may be added the somewhat rude liberties taken with this tuber in rubbing off the early sprouts generation after generation. I will take these in their order.

As to the fermentation let me at once point to the difference between the wear and tear of the very early kinds and what are called winter Potatoes. I should like to know how many kinds of the latter have come and gone whilst our old *Ash-leaved Kidneys* and the other early border kinds have stood their ground. During the last thirty years I have received, cultivated, and discarded twenty or thirty kinds of the latter section, whilst I can grow the *Ash-leaved Kidney* as well as, and better than I could thirty years since; and not only this *Kidney*, but also some of the early round kinds, formerly known as *Early Shaws*, *Early Frame*, and the like. Now these kinds, being few in bulk, have never been forced into pits; they have undergone no fermentation; they have been slightly greened, kept dry, and spread on floors or shelves; but in the country, and where many Potatoes are grown, we have all been forced to pit the bulk of the latter crops, not having room to stow them otherwise. As to the early kinds, it is seldom they make a premature growth which requires rubbing away; but not so with the successional or late kinds. These, if in bulk sufficient to become heated, very generally sprout, and their sprouts become so weak, through long confinement and the germinating conditions in which they are placed, that most cultivators prefer destroying their first sprouts, and falling back on a second series.

Now, if this appears not a sufficient cause of disease,

it is at least one of weakening of constitution; and, if such a course is persisted in through several generations, what may we not expect either in plants or animals? And when to this we add that through high manurings the plants thus handled are alternately excited and depressed, the case assumes a still more serious character.

Now let us look into the manure question: in doing so it will be well to consider how long the Potato has been subjected to such high culture, and whether manurings have been on the increase in later years. That the latter is the case I have no doubt, and the increase in manures may be dated from that period when great competition took place as to the field culture of root crops, and when our exhibitions had their birth. It is not easy to fix a precise date to these matters, but it may be placed, I think, at from twenty to thirty years since. Admitting, then, that manurial applications have been on the increase, let us inquire, as practical gardeners, what we should expect, or rather, anticipate from manures in excess acting on the watery system of a plant from warmer climes. Why, in plain gardening English, we should expect that the elaborative or preparing powers of the plant would be in arrears, and that the whole system would, in showery seasons, be so overcharged with fluids that the economy of the plant in question might be expected to become deranged in consequence.

Let us borrow a comparison, which, as I think, comes sufficiently close to our case to illustrate it. Take a young healthy-growing Peach tree from the nursery, plant it on ground highly enriched with manurial matters, causing it by such means to produce what has been nicknamed "basket twigs," and what has ever been the result? Why, ill-ripened and very generally half-rotten shoots, which, at the very moment their highest elaborative functions should proceed, are suddenly arrested by some apparently unaccountable calamity perverting the whole system of the tree.

But, if any one still doubts the corrupting influences of an excessive application of manures, I will tell what occurred under my own hands. About the year 1832 I planted Potatoes in such a way as to test in the highest degree their prolific powers. I was then exceedingly fond of experiments. I tried to my full knowledge the forcing powers of a judicious combination of rich manures with a proper degree of mechanical texture in soils: the result was that I obtained seventy pounds' weight at one root! But what were they like? Why, I had odd forms enough almost to illustrate "Bonny-castle's Mensuration." Some of the very largest would, in hard times, have done for drums after a little clever handling; and as for quality, why the very pigs turned up their noses at them. I, of course, was highly praised by some persons and sneered at by others; but this I did not mind. I wanted to know the effects of an excess in high cultural principles, and whether there were not limits which we could not pass with impunity. What these monstrosities would have performed had they been planted and pushed onwards by "might and main" it is difficult to say, and I here express my regret that I did not pursue the practice for at least three successive years: such, I have no doubt, would have settled many a Potato puzzle.

I will now leave the garden, and quote something illustrative from the farm. It is notorious in these parts, where thousands of acres of Potatoes are annually grown, that the poorer the soil is, or at least the nearer to a state of nature, the less virulent is the disease. Now, although there may be a few exceptions, yet I am perfectly assured, from my own personal observations during the last ten years, that such is the case. The fact is unmistakeable, and I may observe that I passed through a field or two of this character two evenings

since in which the disease has been manifest for at least a fortnight; but the stems and foliage, instead of assuming the black and pulpy character, are undergoing a steady course of drying; they may be called rusty in appearance, and will soon be standing like sticks, their leaves crumbling into a mere powder. Now, this land has been badly farmed for several years—all taken out and little put in, which, according to the saying of the auld Scotch wives as applied to the meal kist, "sune gets to the bottom."

But, amid all this disaster, there can be little doubt that in a few years the disease will wear away. We have few cases of utter extermination amongst vegetables. Let all parties well consider these things, and lay aside, as far as possible, all abuse of the nature of the plant.

R. ERRINGTON.

CRYSTAL PALACE GARDEN.—AUGUST 8TH.

THIS was the first day of the Poultry Show, a half-crown day and a concert day; it was also a dull, cloudy, threatening-to-rain day, with a heavy fall of rain in the afternoon. The poultry did not look well at all under these circumstances. Some of the Geese were splendid birds. The Pigeons look well and lively in all weathers, and so ought the Rabbits; but no one could get a *frisk* out of them that day, the sudden change in the weather made them so drowsy. One of the hens in the first prize pen of White Cochins was the best model of the race I have yet seen.

But my chief reason for going was to see the flower gardens in their best trim for the season, and I was never so much gratified there before. There is a marked improvement in the planting all over the garden, and a much better arrangement of the colours than usual. The simplest garden in England is difficult to plant to those who do not understand the subject; but there is nothing difficult to do in planting the whole of this garden. There are thousands of gardens under one acre in extent which are ten times more difficult to plant properly than the whole of the Crystal Palace gardens, and, speaking like a critic, that is the highest praise that can be given to the designer.

The whole of the planting is in the promenade style, except the fringing of the shrubberies and the two chain patterns on each side of the centre of the upper terrace, and in that style all the beds accompany the walks, and no others are to be met with. Whether that should be the rule in all public gardens, or whether the rule should be admitted into private gardens, I shall not stop to inquire.

"Simple addition" is the easiest rule in arithmetic, and promenade gardening is just as simple in designing and planting flower gardens. It must have been from the want of a large stock of suitable plants that the chain patterns were hitherto planted on a wrong system. The first attempt, that of connecting the links of the chain by means of a dark Verbena, was so far good; but last year and the year before that this chain, which is of the most beautiful design, could not well have been planted on a better plan to destroy the effect of the design itself; but this season the two chain patterns are planted to perfection for the first time. The colours, and the space which is given to each colour, can never more be improved on. The only improvement can be in the kind or kinds of plants made use of; so that in planting a chain you can make it fit for the Queen to wear as it were, or you may have it as a hayband to hold up the corduroys of a "navigator," simply by the proper use of a few suitable plants.

Tom Thumb Geraniums, *Calceolarias* of the *Rugosa* section, and *Mangles' Variegated* Geranium are all the

plants used in these chains. There is not a continuous chain all round one of the sunk panels; there are four pieces of the chain in each panel, one to each side, and where the ends meet at the corners there is a large circular bed of Rhododendrons placed there to break the line; but these Rhododendron beds ought to have been of a blunt triangular shape to be in accordance with the rules on which the gardens are planned. That shape would be very objectionable, and no doubt it is best as it is. Both sides of the question must have been well considered before a decision was made. Where the chain ends and begins at one of these Rhododendron beds the end bed is nearly heart-shaped. The centre of this bed is planted with *Calceolarias*, with a row of *Tom Thumb* round the yellow, and a row of *Mangles'* round the outside. *Mangles'* keeps the outside all the way to the end of the chain, and the narrow bands which connect the beds are filled with it.

After the first bed the next two beds are circles, and after them an oblong bed, and so on to the end bed, which is as the first bed. All the circles are filled with *Tom Thumb* and edged with *Mangles' Variegated*, and all the oblong beds are planted like the heart bed at the end. Now, the only way this can be improved on would be to have the scarlet in the circles of a different tint from the scarlet round the yellow in the oblong and end beds. Many people would not admit this to be an improvement; but one of the greatest secrets in flower gardening is to get as many shades or tints of a colour as possible without opposing the principal colour as it were. Suppose, for instance, ten scarlet beds along the side of a walk, and ten beds of yellow or of white to mix with them alternately along the line—would it be better to use two plants only for the twenty beds, or twenty kinds of plants, and one kind only in a bed? The simplest way would be to use two kinds of plants only—*Calceolaria* for yellow, or *Verbena* for white, and *Tom Thumb* for scarlet.

If I could find ten kinds of scarlet Geraniums which had the same style of growth as *Tom Thumb*, but with a slight variation of tint in the flowers, I would plant the row, and, though a stranger to my plan could not see any difference from *Tom Thumb* in all the beds, the difference in the shades of scarlet, as he walked in front of them, could not but strike his eye, supposing his eye could see colours; then by placing each two of the shades next each other which came the nearest to one shade the deception would be perfect. But the effect on a good eye would be the highest which could be produced by scarlet, and I allow that the chain might be a little improved by using the *New Trentham Scarlet* either round the yellow or by itself in the circular beds. Whichever of the variegated Geraniums has the most silvery looks would be the best where *Mangles' Variegated* is now, but it is very good as it is. *Compactum*, *Commander-in-Chief*, *Cerise Unique*, and *Cottage Maid*, which is next to *Compactum* in colour and style, are what they use for the corners of the end panels, and the banks in front of the wings are planted really in good taste this season. The line next the wings is straight, and is filled with Rhododendrons, and that next the walk is like a section of a number of archways. The curved lines of the arches are planted with silver variegated Hollies, and edged with purple Verbenas. The spaces between the Rhododendrons and Holly are not wide, and they are planted with scarlet Geraniums chiefly; and at all the points from which two arches spring a drop hangs down as it were, and that drop is a bed of the *Flower of the Day*, and is exceedingly pretty. The circular beds between the Rhododendron beds along each end of the terrace walk are planted with different kinds of Verbenas, and a *Fuchsia Dominiana* in the centre; also a bed of *Brilliant* Geranium with an edging of *Lady Plymouth*, which is very good.

In the centre part of the terrace the circular beds have been planted alternately with standard Rhododendrons and the Parasol Acacia, *Robinia umbraculifera*. This is a leaf out of the Experimental Garden, and they are now the same as our pincushion beds, with the exception of the burnt-brick edgings. One great advantage of the promenade system is that all the circles may be planted with some standard plant, as a Rose, Rhododendron, and what not, without spoiling the effect of the planting. Everybody admires the plan with us, and the rest of the world may see it at Sydenham. They use immense quantities of the *Shrubland Rose* Petunia, and they proved *Marquis de la Ferte* and *Countess of Ellesmere*, two seedlings from the *Shrubland Rose*, to be only third-rate to the parent. I proved the same thing in the Experimental, but I would never say a word about it, as the parent was my own model for a bed.

Their pincushion beds are all planted this year with *Calceolaria amplexicaulis*, pegged down, and edged with *Lobelia ramosoides*, and the oblong beds between them with *Tom Thumb*. There are eleven pincushion beds and ten oblong beds on each side of the walk which cuts the terrace in the centre. The circular beds round the pedestals and vases are also of *Tom Thumbs*, four rows in each bed, and a most appropriate edging of *Cerastium tomentosum*. They did not bring this edging to perfection till this season; but it is one of the most useful edging plants in the world for small gardens, as it requires no more room than *Lobelia ramosoides*, strikes as easily as any plant we know, and is as hardy as a common Daisy. It is best from autumn cuttings every year, and the nurseries ought to get hold of the thousands of old plants of it which the Crystal Palace gardeners will have to throw away this and every season of their lives. Just offer them 500 plants of *Baron Hugel* or *Harkaway* for 1,500 plants of their yearling *Cerastium*, or twenty *Diadematus* for 100, or twenty-five *Touchstones* for ditto.

Lady Mary Fox is the only bedder they have of that class, and, as her ladyship does so well on the south side of the Rose mount, we may conclude there are at least twenty kinds of different Geraniums which would answer equally well there in separate beds.

The tall *Dahlias* are not trained down this season, and there are Hollyhocks in the centre of the Dahlia beds. The beds for the great Deodars are edged with Stocks and China Asters. There is a very good collection in the beds along the six walks which wind up the Rose mount, a new kind of *Tropæolum* of the *Lobbianum* breed being the best. It is called *elegans*, and is the best bed at the Crystal Palace, a light orange tint. The angle beds here are particularly good. The first is of *Cerise Unique*, edged with *King of Purples*. The second is of the largest purple *Petunia* that ever was seen. It is called *Magna coccinea*, but we have it in the Experimental under the name *Magnificent*. It is edged with *Mangles' Variegated*, and makes a splendid bed. The third is yellow *Calceolaria*, edged with *Lobelia ramosoides*. The fourth is pink *Nosegay* Geranium, surrounded by *Lucia rosea*, and edged with white *Ivy-leaf* Geraniums. The fifth is *Calceolaria*, edged with *Tom Thumb*; and the sixth is *Tom Thumb*, edged with the *Variegated Alyssum*. All the rest of the beds round the Rose mount are in circles and in pairs, and every pair is planted this season in contrast, which will please nine out of ten better than any plan, and will also dreadfully offend the eyes of some few persons. But I shall have more room for this subject when I see Kew and Hampton Court, and perhaps the garden of the Horticultural Society.

Too much of a good thing is the only fault at the Crystal Palace this season. There are miles of the edges and ins and outs in the shrubberies, clumps, and planta-

tions, and every available inch in all the miles is filled with scarlet Geraniums. The effect of this on the place is peculiarly monotonous and commonplace.

D. BEATON.

VINE FAILURES, VINE BORDERS, AND REPLANTING VINES.

"I HAVE a vinery thirty feet long heated by hot water, the internal management of which, with respect to heat, air, and moisture, has been such as to justify me in expecting a good crop of Grapes, and I am told by parties who have seen the border (which is outside the front wall, being set on arches) that it is most efficiently done. However, I am much disappointed, as both last year and this I have had a poor crop indeed, and the few bunches that were there coloured very badly last year. This year they have not yet begun to colour.

"I have examined the border, which, by the way, has a *steep pitch*, having about two feet of a fall, and I find that the first eighteen inches of soil are of a rich, open nature, with scarcely a root in it; but upon going down about another foot into a poor sandy soil I found the majority of the roots, though in a very unhealthy state. Now, I contemplate bringing them nearer the surface. Shall I be doing right? and what time will be best for the operation? I have plenty of fresh brown loam, some well-rotted manure, some leaf mould, some well-decayed vegetable matter, and some lime rubbish and broken brickbats, which I intend mixing well together, and also the eighteen inches of good unexhausted soil from the *top* of the border. Will that compost insure success as far as root management goes? and should I set about it immediately, a *thorough shading* being secured, or stay until what few Grapes there are be ripened and cut, then keep the house close and moist, allowing the Vines to grow unchecked at the *top of the house* to excite root action before winter sets in? Would it prevent the next year's fruit-buds from getting properly ripened? Should I plant a few young Vines along with them, in case of the old ones proving a failure?"—J. JUST.

There has been so much said of Vines lately that we fear entering into your case will be very like a reiteration of frequently repeated ideas; and yet we can hardly dismiss it with a simple reference, as many readers will now be thinking of setting about forming Vine borders, &c. Your information is not sufficiently precise to enable us to see thoroughly the cause of failure, though from the data given we have our doubts either that the border was not "efficiently made" or that the after management was wrong. To suit various circumstances I will throw a few inferences into separate paragraphs.

1. When borders are well made, that is, secured against anything like stagnant moisture, good Grapes may be grown in a depth of soil averaging from fifteen to twenty-four inches; but good Grapes may also be procured in well-drained borders that are from two to three feet deep, or even deeper. The advantage of the shallow border is that the roots are more under your command; the disadvantage is that you must guard these roots from extremes of wet and cold. The advantage of a deep border is that the roots are comparatively indifferent to extremes of temperature; the disadvantage is that you can do little to excite them into extra activity when you wish to excite the Vine stems in the house. Hence I have frequently seen houses forced year after year in January or earlier, the border left in its natural condition, and good crops produced; but you might search in vain for many roots near the surface. I have seen the same thing tried with shallow borders, and disappointment ensue, because the roots near the surface received a sudden chill, which told on the young Grapes when in a critical state.

2. Hence it will appear that a deepish border well drained, other things being equal, will require less care, just because it is so far beyond our control. A shallow

border is more under our management; the roots, if prevented going down or coaxed to the surface, are nearer the atmosphere, and the wood is likely to be more fruitful in consequence; but if we work such Vines much before the natural period we must give the border protection, to guard it against sudden extremes of wet and cold in winter, and in summer we must coax the roots to the surface if there is nothing to prevent them getting down.

3. The roots of all trees, Vines among the number, if left to themselves, will naturally get downwards—a fact which contributes to the timber properties of our native trees, because they thus obtain a sufficiency of moisture when the external surface is rendered very dry; but a fact and a result that should teach us a *preventive* in the case of tender exotics which we cultivate for fruit, as otherwise we may have unhealthy and unripened wood, and look for fruit in vain.

4. Other things being equal, the greater the depth from which shoots draw their moisture the more gross will be their growth, and the greater the amount of sun and heat necessary to mature that growth and ripen its fruit-buds. On the score of fruit bearing alone, then, and especially when the plant is an exotic, rejoicing in a more sunny sky than we can command, it is important that the moisture absorbed should be within atmospheric influence. This is one reason why the roots should be prevented getting too deep. Another reason is the frequent unsuitableness of the soil or subsoil for the growth of such plants. In addition to the depth of the moisture it becomes the medium of unfavourable properties, and the roots penetrate a stratum in which they cannot thrive.

5. In the present case, then, the roots having descended into a poor sandy soil, and very likely with some noxious substance in it, as an extra amount of iron, the roots should either have been prevented getting into it by a good layer of concrete on a sloping foundation, or should have been encouraged to keep in the good soil above it by protection from wet and cold in winter, and by surface mulchings and surface waterings in summer. Without either this concreting or flagging to prevent the roots going down, or this summer attention, the mere lifting the roots will be attended with advantage only for a few years, the main young feeders striking downwards again in search of moisture. I am inclined to think that the want of this surface attention to the border is the chief cause why the roots have descended into this poor sandy soil: they wanted warmth in winter and moisture in summer. Some time ago I had a similar case, on a nice sloping border too, with a good drain in front of it, brought under my notice. It was no deeper than our correspondent's, and its owner stated that it had received neither protection in winter nor watering nor mulching in summer for several years. He disliked the idea of concreting his border, but the roots were carefully raised, fresh matter incorporated with the border to make it six inches deeper, the roots placed within from four to six inches of the surface, protected with a tarpawling or a thatch of straw in winter and a mulching in summer, and there has been no more failure.

6. Our correspondent will now resolve whether he will concrete the bottom of his border or not. Under the circumstances I would advise doing so, making thus a sloping bottom for the border from two to three inches thick of concrete, formed by one barrow-load of quicklime to seven or eight of gravel and rough, hard sand, using enough water to mix it, laying it down at once, and rolling firmly as soon as it would bear it. On this, when dryish, place a layer of brickbats, and then the soil, the roots of the Vines all the time being kept moist, wrapped up in cloths or mats, and replant from four to twelve inches from the surface, according as you mean to protect the border or leave it alone.

7. The raising and replanting the roots will be of great benefit without the concreting, but will not be a lasting one unless, by the means referred to, the roots are encouraged to keep near the surface.

8. In performing the operation it will be best to remove the surface soil in which there are few or no roots, and then begin at the outside of the border picking among the roots, saving every fibre that you can, and as soon as long enough put them in a cover as you proceed, until you get quite up to the wall. Keep them covered and damp, and they will take no harm for a short time, though, of course, the sooner they are replanted the better they will be.

9. If your description of your present compost is correct I would add the fresh brown loam, the lime rubbish, the broken bricks, and perhaps a few broken bones, so as to make the border from four to six inches deeper, but I would add neither leaf mould, dung, nor decayed vegetable matter. It will be better, in such circumstances, to give extra nourishment when the Vine roots are working freely next season by mulching and waterings.

10. See what has already been said about the time of performing such an operation. In your case I should prefer the end of September; the fruit will then be ripe, and the wood nearly so. Keep the foliage green as long as possible by shading and syringing, as that will promote root action. The soil will then be warm, and will also encourage root action. Just damp the soil where you put the roots down, but do not by any means make the border wet; on the contrary, keep the surface dry, and expose it to every ray of sunshine so as to secure heat. Towards November put on a little covering to prevent the warmth escaping. With such care I consider that your chance of a crop the following year will be better than if you had never lifted the Vines. On cold days in October you may require a little fire heat to keep the Vines growing. The longer the Vines grow before the first or second week in November the better will the roots be getting on. I would not advise forcing early the first year. Even if you commenced in February it would be necessary to give the roots a fillip by raising the border to between 60° and 70° with fermenting matter. Of course, if the Vines broke about March, less of that would be necessary.

11. If Vines are very old, long planted, and fail from being too deep in bad subsoil, I should deem the labour ill bestowed in lifting and replanting them. I should prefer freshening the border and planting young Vines. If the Vines are young, say planted from five to ten years, and have got down into such a subsoil, I should prefer raising them to planting fresh Vines, as likely to be more fruitful, and to continue keeping their roots nearer the surface.

In your case, and as giving two strings to your bow, there can be no harm in planting a few young Vines as you propose, and then if any fail you will be more secure; but you must select in time what to leave, in order that the Vines may not be crowded so much as to deprive them of a due amount of light.

If I can give any further assistance I shall be glad.

R. FISH.

MILDEW AND ITS EFFECTS.

Few things have oftener baffled the efforts made for their eradication than the mildew; and though its existence is probably as old as that of the superior class of vegetation to which it clings, it has, during the last few years, become more destructive in its ravages, and has consequently received a proportionate increase of public attention, and there are parties sanguine enough to insist that its destruction is as easy as that of a crop

of weeds. Unfortunately these parties do not seem to have had very obstinate cases to deal with, and probably the cures they suppose themselves to have effected might have occurred without their assistance.

As the evil is extensive in its operation a glance at a few of the crops affected by it may lead to some useful hints relative to the best way of avoiding it.

TURNIPS.—Swedes are particularly liable to this malady in dry seasons, the foliage becoming coated with a white substance as if covered with dust. It is, however, more easily got rid of in this crop than in many others. A good rain gives fresh life to the plant, and if continued, together with the long autumn dews, fresh leaves are formed, which resist this pest, and the plant grows on. White Turnips are not so prone to mildew as Swedes, but all are liable at times.

HEDGES.—I have seen the tips of all the shoots covered with mildew so badly as to completely stop the growth, and of course the tips all die in winter. In cold, wet summers this evil exists to a much greater extent than in dry ones in the matter of hedges, but in some plants a contrary course seems to be the case, so extraordinary is this visitation; but I remember noticing a hedge one season which had escaped the mildew, while all around it was infested. It was by the side of a public road, along which some scores of loads of lime were being daily carted, the droppings from those carts getting ground into dust, and, being blown upon the hedges, completely coated them in the same manner that turnpike hedges usually are, and it effectually preserved the shoots from mildew, thus showing that lime is antagonistic to its production.

HOPS.—There certainly have been greater efforts made to arrest the progress of mildew on this plant than on any other that I know, and it must be acknowledged that no plant presents greater facilities for studying its effects. Very valuable for their produce, there are few growers that would deny any reasonable amount of labour or expense that would insure them a crop; consequently the wish to save the plants from mildew, or what is more generally termed *mould*, has given rise to various preventives or remedies. The friends of sulphur are loud and positive in their assertions of its efficacy, while certain manures are reported by others as likely to invite it; in fact, the eccentric way in which it exhibits itself puzzles all attempts at assigning any general cause. One plot may be rendered worthless by its attacks, while another adjoining may entirely escape, and yet there may be no perceptible difference in their management, situation, or other circumstances. In like manner the application of sulphur may result in the disease disappearing, and a healthy crop following; but it far oftener follows that the disease baffles every attempt to remove it, even when the remedy was applied betimes, and continued assiduously until all hopes of saving the crop were gone. This want of success has led many to believe that in the successful cases the means applied had very little to do with the change; that nature effected it without the sulphur, or in spite of it; and, in fact, we often do see changes for the better take place without artificial help. The subject, however, is far from being a settled one, and sulphur *versus* mildew is one amongst many other cases not yet decided. Experiments on a grand scale are entered into annually; yet the subject is as much involved in doubt as ever. The bustling advocates for sulphur, asserting its unfailing utility one season, find to their mortification that it is powerless the next; but a new set of experimenters take their place, and the same results follow. It may be argued that the disease presents different features, which ought to be treated accordingly; but to the general looker-on the same result is observed, and it is only reasonable to suppose that the species of parasite which attacks the plant with fatal results one year is the same which does

so another year, but in a more mitigated form, so as either to give way to the means applied or to the strengthening influence of improved weather. The latter, in my opinion, is the most important of all the remedies not only for this but for all other diseases to which the vegetable world is liable.

Now, in admitting this I do not deny the merit justly due to the enterprising cultivator who assiduously applies the remedies best calculated to effect an improved change. The moral of the old fable of "the gods only help those who help themselves" may very properly be applied to Hop growing; but there is still much left to that "glorious uncertainty" of which Hops, above all other grown things, are remarkable, and though this uncertainty may terminate, as it often does, in a favourable way, still it is equally liable to be the reverse, and *mildew*, otherwise *mould*, is found an obstinate customer to deal with; at least we have found it so, and its appearance is looked upon as disastrous in the extreme to the grower.

Scientific investigation having failed to point out a remedy, still less a preventive, the conjectures as to its cause are numerous enough, some thinking it arises from over-manuring, others from a reverse treatment; and the singular way in which it attacks one plot of ground and not another, though both seem alike liable, is one of the features not easily accounted for. Of course the consequence is generally fatal to the crop, many acres not producing a single hop, or, where only partially attacked, the quality is so much deteriorated as scarcely to pay for the expense of picking. As I have before observed, a dressing with flowers of sulphur is often resorted to, the whole plant being dusted over with it; but the effect produced is not always successful, and some of the greatest advocates for the sulphur dredging-box have been obliged to acknowledge the disease to have baffled them.

PEAS.—We now come to a more homely crop, and one which has been very indifferent the present season in many places. Having had a drier summer than usual, Peas have been scarce, and at the time I write (the 1st of August) the prospect is not at all good for the future. Like many others I have tried the all-potent agent, sulphur, with but indifferent success. The disease on the Pea arises, I think, from the plant being grown at an unnatural season. Nature's object in directing a plant to grow, ripen its seed, and reproduce itself, is generally accomplished without any further detriment from insect or disease than is necessary to maintain that just balance of things so beautifully arranged by Divine economy; but Peas and many other crops are attempted to be grown under circumstances so widely different from those to which they were accustomed in a wild state, that disease or delicacy need not be wondered at.

Now, in my opinion, the cause of mildew in Peas arises from the plant being unable to obtain a due supply of proper food, or, where it does so, the leaves of the plant, which are properly designated its lungs, are not in a healthy state to act upon it. Hence the plant becomes a victim to disease from two opposite causes. The first of them is, Peas being carried off by mildew in dry, hot seasons on dry, gravelly, or sandy soils, where the plant is denied the liquid food necessary to its growth; and, in the second case, the food supplied exceeds the capabilities of the plant to properly digest it. The lack of sunshine or other genial warmth paralyses the plant, and it falls a prey to mildew. This latter case admits of little that can palliate it, unless it be planting in a drier soil. The judicious use of the watering-pot may be of some benefit in the first case, when the evil arises from a lack of moisture; but it must be borne in mind that deluges of cold spring water are as bad, perhaps, as the absence of enough moisture. Rain water somewhat warm, and holding some manurial

substance in solution, is the best, guano or sheep-dung being as good as anything to mix with it; and after the ground has been thoroughly moistened with it let it be covered over with short grass or any suitable litter that may be at hand, to prevent the sun too hastily abstracting the moisture from it again. Repeating this once a week or oftener will be found to do more good than anything I have ever tried for preserving Peas, and a late crop may be secured in most cases. Planting them widely is also a preventive, as a due circulation of air has much to do in the matter, other things being likewise favourable.

Many other plants might be mentioned as being peculiarly liable to the attacks of mildew, and it is but too true that the number of these is on the increase. But a few years since it first attacked the Grape Vine with a virulence which has been truly deplorable in some places; and, though we have a more effectual remedy in the flowers of sulphur to conquer it in our hothouses, its application out of doors has been, like that on the Hop, very uncertain and unsatisfactory. But, as some other writers may possibly be giving us their experience on this pest in hothouses, I will conclude these notes for the present by advising all those who find mildew show itself on their indoor Grape Vines to lose no time in coating over their hot-water pipes, flues, or other heating places with a sulphur mixture, and, closing up the house the first night, let fire be at once applied, moistening the house at the same time. The sulphurous vapour arising therefrom will do more to counteract mildew than much dusting over the foliage will do, but the latter plan may be adopted also. J. ROBSON.

TOMTITS.

FROM an answer to correspondents in THE COTTAGE GARDENER of August 4th, 1857, it appears that one "THEOPHILUS" is desirous of a means of getting rid of Tomtits. I can only advise him to entirely rid his trees and hedges of insects, and the Tomtits will be starved. Until he can perform that feat I should rather persuade him to encourage them, as they and the chaffinches are the fruit grower's best friends, and were it not for their destroying the insect pests no fruit could be grown. It is often that those who complain so much of the blight are the most determined destroyers of these little friends, which an All-wise Maker has sent for his benefit, and which he ignorantly exclaims against.

I have watched the Tomtits, and cannot find that they do any harm, but that they are continually working for man's benefit; and no bird is more affected by the want of food in winter, as by an all-wise provision it is so arranged that, when the cold is sufficiently intense to destroy those insects in their winter retreats, it also kills the Tomtits: thus man's interference only upsets the balance which nature was made to provide. The Tomtits and the bullfinches are usually termed bud-destroyers; but, wherever the bullfinches have pecked the buds most, there I have seen the best crop of fruit, so I do not think that they cause much destruction. This fact I have proved several times to my own conviction that no harm was done. Most people come too hastily to conclusions from mere appearances, without thoroughly investigating the case; but let those who are doubtful carefully notice those trees which the bullfinches and Tomtits or chaffinches infest most in spring; let them examine on what these birds feed, and the consequences that follow both their presence and their absence, and I feel certain they will come to the conclusion never again to destroy any of these or many others, as the hedge-sparrow, yellowhammer, thrush, blackbird, and starling, which are among the most useful of our feathered friends.—B. P. BRENT.

NEW AND RARE PLANTS.

RHODODENDRON THOMSONI (*Dr. Thomson's Rhododendron*).

Found at between 11,000 and 13,000 feet elevation in the mountains of Sikkim Himalaya. It bloomed in April at Mr. Methven's Nursery, Bonnington Road, Edinburgh. Perfectly hardy; but as the flowers, which are deep crimson, come so early, they cannot be expected in perfection except in a cool greenhouse.—(*Botanical Magazine*, t. 4997.)

THUNBERGIA HARRISII (*Lord Harris's Thunbergia*).

This beautiful climber is a native of the Tenasserin provinces and Malay peninsula in Eastern Bengal. It flowers in a stove during winter and early spring, having been first bloomed in this country by Messrs. Veitch, of the Chelsea and Exeter Nurseries. The flowers are light blue, with a yellow throat.—(*Ibid.* t. 4998.)

TYDÆA AMABILIS (*Handsome Tydæa*).

"The type of the genus *Tydæa* is the well-known *Achimenes picta*, which has been separated from the other species of *Achimenes* by Professor Decaisne." This closely resembles it, but is a native of Papayan, in New Granada, in the cold region of the Cordilleras, at an elevation of 8000 or 9000 feet. It ought, therefore, to be a greenhouse plant. Blooms in spring; flowers a deep rose, spotted with the same colour; and this is the chief distinction from *Tydæa picta*.—(*Ibid.* t. 4999.)

BURTONIA SCABRA (*Rough-leaved Burtonia*).

It has been called also *Gompholobium scabrum*. Native of Nootka Sound, and flowered at Kew in 1803, but has long been lost to our collections. Its flowers, more brilliant than those of the other known species, appear in May, and came "from the Botanic Gardens of Trinity College, Dublin, through the kindness of Mr. Bain, the curator and very able successor to the venerable Dr. Mackay." It requires a well-aired greenhouse. Its pea-like blossoms have a purple upper petal, or vexillum, and blood red wings.—(*Ibid.* t. 5000.)

CÆLOGYNE ELATA (*Tall Cælogyne*).

A native of Bhootan and Sikkim Himalaya, at elevations between 4000 and 6000 feet. The flowers are creamy white, and appear in April. A very fine species.—(*Ibid.* t. 5001.)

IMPLEMENTS AND OTHER CONSTRUCTIONS
SUITED FOR GARDENS.

EXHIBITED AT THE HORTICULTURAL SOCIETY'S SHOW AT
CHISWICK.

(Continued from page 299.)

MESSRS. GIDNEY AND SON, East Dereham, Norfolk, exhibited all the excellent articles suitable for garden and household purposes which we noticed and illustrated in our 422nd number. These we shall not further notice, except to observe that we have had frequent opportunities since of trying their *Self-acting Fumigator* for the destruction of green fly by tobacco smoke, and we have found it the most effectual instrument we ever tried. It generates the smoke most rapidly, and, by thus speedily filling the greenhouse or other structure with smoke, renders a much less consumption of tobacco necessary than when the smoke is produced slowly.

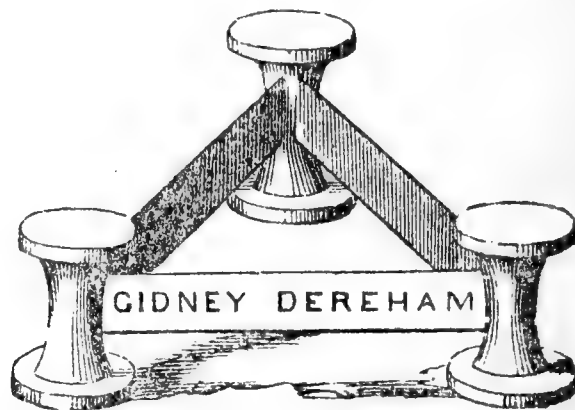
IMPROVED GARDEN ENGINE.—This is made of stout metal, not liable to rust, and moves on strong iron wheels. We recommend this and all other garden engines to be furnished with *Starr's Patent Protean Jet*, a contrivance very simple, and not liable to be out of order, notwithstanding its complicated name. It is called *Protean* because, like

the fabled god Proteus, the water delivered from it takes various forms just as the gardener may wish, namely, a



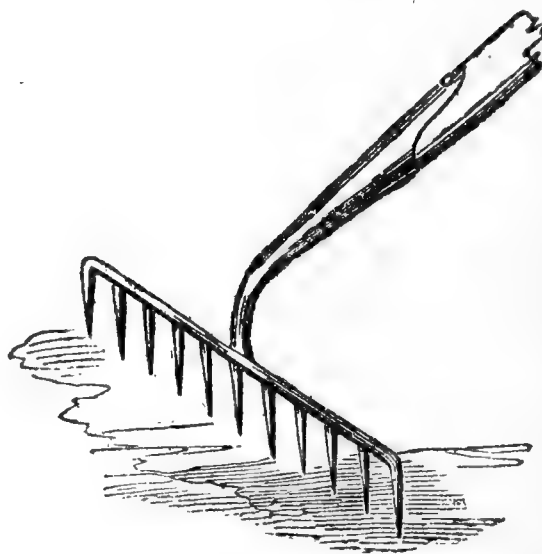
finely-divided shower, a heavier shower, or one compact stream.

IRON GARDEN SCRAPER.—This invention of Messrs. Gidney is very simple, yet very useful. The three pillars



are of a form and weight to keep the scraper firmly in its place whilst being used, without its being fixed. Its three blades render it at once available from whatever side approached, and being portable it can be easily removed to any part of the garden where it may be most required.

IMPROVED GARDEN RAKE.—This is one of the cleanest-working tools, even in wet weather, that we have ever em-



ployed. The teeth are fine and round, and, being shouldered into the frame, are not liable to become loose. The neck also, gradually tapering and joined to the head at a right angle, is not liable to become embarrassed by weeds and soil. It is very light, and adapted for ladies' use, yet stronger than the rakes usually sold, and consequently suitable for general use.

AMARANTHUS OLERACEUS.

(THE CHUSAN HAN-TSI.)

SEEDS of this vegetable were despatched in a letter sent by Mr. Fortune, dated Chusan, September, 1844, and received at the Garden January 9th, 1845.

Mr. Fortune states that it is "a vegetable used as Spinach by the Chinese. This variety grows strongly, and ought to be sown in beds or rows rather thinly."

It proves to be the *Amaranthus oleraceus* of Linnæus.

Stems erect, from two to three feet high, channelled, pale green; branches nearly round; leaves oval, cuneate at the base, three to four inches broad, and five to six inches long when well grown. Petioles slender, two to three inches in length, of a still paler green than the stems. Flowers axillary, crowded, pale green.

It requires to be grown in a very rich light soil and a rather moist temperature of about 60°. If proper accommodation can be afforded the seeds may be sown at any time, and the leaves will be fit for use in two months after. Some plants were put out in June on a warm border, but did not succeed. At the first gathering the tops may be cut off, and fresh leaves will be thrown out, but they will be smaller than those first produced.

A few leaves of Sorrel improve the common Spinach. The Han-tsi possesses in itself a very slight but agreeable acidity, which renders the above addition unnecessary. It is to be regretted that it is not yet sufficiently hardy to succeed out of doors; but it can be easily cultivated in pits or in pots in any forcing-house, and thus afford an additional variety to the culinary list even in winter.—(*Horticultural Society's Journal*.)

[It was cultivated here more than a century since by Philip Miller, but was neglected.—ED. C. G.]

REARING LARKS.

SKYLARKS' nests are found on the ground in fields or heaths. The eggs are of a dirty white, spotted with brown. Young Larks must be taken before they are quite fledged, or else they will be caught with difficulty. They must be fed on soaked bread and milk mixed with crushed poppy and rape seed, and, if you can procure them, on ants' eggs. The cocks may be known by a yellow tinge on their plumage. You must give them plenty of water for drinking and bathing, and green food. Old birds are caught with nets and nooses in winter, and must be put in a cage, covered inside with calico, and fed on oats and meal worms at first. The best food for Larks when full grown is minced bread and meat (cooked meat). They must be kept in a cage with a bow-shaped projection in front, on which projection you must put a small turf of grass, renewing it twice a week. Put red sand in the bottom of the cage. They have long claws, which must be cut regularly once in eight weeks. They generally live for eight years.

Woodlarks must be reared rather differently. They usually build their nests under a small bush or between the roots of a tree. Their first brood is hatched in the beginning of April, their second in July. The young must be reared on ants' eggs and bread soaked in milk. The best way of taking young Larks is to go at night, and fasten a



Amaranthus oleraceus.

net over the nest, thus inclosing parents and young ones, and then the old birds will bring up the little ones. You may catch them by setting a trap, and putting a caged decoy bird behind the trap. Full-grown Woodlarks must be fed on minced crumbs and meat, and ground hemp and poppy seed. Once a week give a moist turf for them to cleanse their feet on, and sand at the bottom, and *plenty of water*. The song of the Woodlark is like the rich and mellow tones of a flute, and by some its strain is deemed equal to the queen of song, the nightingale. They are delicate birds, and rather rare; for half the birds sold as Woodlarks are only Titlarks, which are much inferior in song to either Woodlarks or Skylarks. They may be reared like Woodlarks.—RURIS AMATOR.

FLORISTS' FLOWERS DURING AUGUST AND SEPTEMBER.

(Continued from page 295.)

CHRYSANTHEMUMS.—These plants will now be showing buds. The only care they require is copious supplies of water—no plants need more in very dry weather: three times a day will not be too often. Some place them behind a wall or a hedge to prevent them drying too much by the sun; but that is a mistake. They need plenty of light to make them stocky and bring out their colours; therefore the best growers set them out in an open part of the garden, and supply moisture accordingly. As they root freely through the holes at the bottom of the pots, the said pots should be frequently lifted, and the roots cut off, otherwise when they are removed into the greenhouse the loss of these, the best roots, will be felt severely, and a great loss of the bottom or lower leaves will be the consequence. Another point is to prevent the autumn winds from blowing down the plants, thus exposing the roots to greater drought, besides breaking the branches. I adopted a method to prevent this which answered well, and that method was to set the plants in two rows rather near together. I then drove in a row of stoutish stakes six or eight feet apart between such two rows of plants. To these stakes I tied firmly long rods, and to the rods I tied each plant. When so tied I found them bear any breeze that blew. Part of this labour and expense was saved by the fact that the plants never required, after a windy season, to be lifted up and set on their legs again, a trouble that took up considerable time before I adopted the plan of securing them to the rods.

In September many of the earlier blooming varieties, especially Pompones, will be in flower, and may be removed into the greenhouse or conservatory. Previous to placing them on the stage they should have their pots clean washed, and a portion of the old top soil removed, and replaced with the richest compost imaginable. This will strengthen the growth, and cause the flowers to open full and bright in colour. In the greenhouse they should have abundance of water, and be frequently syringed over the foliage.

DAHLIAS.—This fine autumnal flower will now be opening its blooms daily. The great attention required is to preserve the blooms from their grand enemy, the earwig. Various traps have been adopted, such as small pots, with a little bit of hay or moss in them, turned upside down, and placed upon the stakes; also bean-stalks stuck in the midst of the bushes. Both these traps are excellent. They must be examined every morning, and the vermin destroyed. It is a good plan to go out after dark with a lantern and examine the flowers. The thieves will, if there are any, be found at their depredations, and may easily be caught then and punished with death.

In dry weather the Dahlia will take a large supply of water. The ground round each plant should be covered with short, littery dung; the water then carries down with it the enriching qualities of the dung, and the dung prevents the water from so soon evaporating; or, in other words, keeps the ground longer moist.

The equinoctial gales may now be expected; therefore strict attention must be paid to keep every branch well secured to the stakes.

Cultivators intending to exhibit should be particular to keep their blooms shaded from the sun. There are various shades, but the best is a small box with one side glass contrived to open. There should be a groove cut in the bottom board to slide in the stem of the flower. In such a shade the flower is protected from both sun and wind.

Cuttings of new or scarce varieties may yet be put in.

A gentle hotbed will help them to strike. Such late cuttings should be put into very small pots, and kept in them through the winter. I have often saved a variety by raising young plants to be kept in such pots through that season.

FUCHSIAS.—The spring-struck Fuchsias will now be in full bloom. No florist's flower is so long in season as the Fuchsia. I believe a succession of bloom may be kept up from June to November by judicious management. Plants that bloomed early and are now becoming shabby-looking should be turned out of doors. If the pots are laid down on one side the growth will be checked and the wood ripened, which will enable the plants to go through the resting season with safety.

HOLLYHOCKS.—The chief care now requisite for the Hollyhock is to keep it securely tied to stakes. Towards the end of September the bloom will be over. If seed is not required, then cut the flower-stems down at once, which will cause the plants to send up a quantity of young shoots. Good varieties should never be left in the ground all the winter. If they are a considerable number will be sure to perish from wet and cold. As soon as the bloom is over I recommend the best sorts to be taken up, and put into as small pots as the roots will allow, and when wet and frosts are expected place them under a cold frame. They require no protection from frost if they are dry.

Seed from good-formed flowers should be gathered as soon as it is ripe, well dried, and put away in a dry room till sowing time.

T. APPLEBY.

(To be continued.)

HERACLEUM GIGANTEUM POISONOUS.— CROPS NEAR WOODSTOCK, &c.

THE late Sir Humphry Davy once nearly killed himself philanthropically through inhaling a deleterious gas, and one of the latest feats for the love of mankind we read of is the washing with water containing arsenic! The very latest experiment, however, for THE COTTAGE GARDENER to warn the world to beware of is the insidious sap of the *Heracleum giganteum*.

A friend called on me the other day with a kind invitation to look over an amateur's garden situated in the neighbouring parish of Stonesfield, and, knowing me to be a great admirer and distributor of the *Heracleum*, he inquired if I was aware of all its properties. I answered, no further than that it was a biennial; that animals were fond of browsing upon it; that both before and when in bloom it was a fine showy plant; and afterwards, when cut into lengths, with some Asparagus foliage introduced at their ends, it proved an excellent woodlouse and earwig catch-'em-alive-o'. "True," said my friend; "but, on Mr. E. Robinson cutting down some of their after-blooming flower-stems the other day, he formed from one of them a species of drawing-room cornet-(without) à-piston, blew through it, and presented it to his younger brother, and I have no doubt, like many a more finished and expensive instrument, it was made to produce much more noise than melody. But that was not all, for in three or four days' time delectable fairy rings appeared around each of their mouths, measuring in diameter exactly that of the mouthpiece of the instrument; and the back of Mr. Robinson's hand, from the circumstance of his having drawn the blade of his knife across it while yet wet with the sap, became painfully inflamed and blistered, his arm swelled to the shoulder, and for a day or so he wore it in a sling." I felt surprised at this intelligence, as I had so frequently cut the stems of this plant into lengths, and had also blown through them, though not to my knowledge whilst the incisions were wet; so to set the matter at rest, for the good of the public, I immediately cut down one of my plants, and rubbed the exuding juice on the backs of my hands, my friend keeping his own carefully concealed in his pockets. I cautiously avoided my face though, for I remembered, when I was a boy at school, having operated on my two cheeks, my forehead, my chin, and the tip of my nose with a piece

of caustic, and unwittingly making myself a merry Andrew for a considerable time afterwards, only, as fate would have it, I had just about that time fought and conquered the biggest boy in the school, which made matters more tolerable for me.

Well, on the following day I paid my visit to Stonesfield Rectory, and surely there was an effect to be seen on Mr. Robinson's hand in form most palpable. It appeared and felt like a badly-blistered burn or scald, but no sign as yet had come over my own. I felt incredulous, so when passing the stump of the stalk—the origin of the discovery—I inflicted a fresh incision on it with my knife, and operated on my left hand again. This was on the Friday. On Saturday morning, whilst washing, I noticed that the backs of my hands looked slightly red from the knuckles to the wrists, and a queer suspicion arose in my mind. Sunday the parts were hot and burning—very disagreeable; Monday the *left* hand badly blistered; Tuesday not quite so bad; Wednesday I could bear the parts to be touched with tolerable freedom; Thursday, midnight, as I am penning this achievement, the state of my hands may be compared to a hand afflicted with the Scotch fiddle; therefore, having stated these cases, I trust they may induce caution in persons, particularly children, not to handle carelessly the fresh-cut stems or stalks of the *Heracleum giganteum*.

As a tag to this communication I beg to add a few lines descriptive of our productions, past and future, in these parts. *Early Peas*, *Beans*, and *Potatoes* have been of first-rate quality. Some patches of late *Potatoes*, few and far between, are slightly affected with the disease at present; but the main crops of *Potatoes* generally look remarkably well. All the *Second Earlies* are ready to take up, and, as I grow no other sorts to depend upon, my own crop is safe, and, as usual, abundant. Late *Marrowfat Peas* are affected with mildew, though in my own case, thanks to the soapsuds, it has not harmed them severely. Would not the *boîte à houppe* prove an extinguisher for the mildew on late *Peas*? *Onions* are good; *Carrots*, partially so; *Kidney Beans*, both Dwarf and Runners, are affected by the drought; *Celery* depends on the treatment it receives; and the main crops of *Broccoli* and other winter *Cabbageworts* are strong in their established quarters everywhere excepting the sloven's. *Apricots* are a failure generally, more so than last year; but the trees are looking very healthy, which last year they did not. *Apples* and *Pears* are abundant, though partial, for in some places I notice them to be very thin. My own trees are doing their duty well; and no insects, with the exception of some red spiders I lately perceived on some branches of a Pear tree against a wall, have dared to show their faces on them since I made the application of scalding diluted ammoniacal gas liquor last year. *Plums* and *Cherries* are a meagre crop; but as for my *Grapes* the tendrils turn to bunches, so draw your own conclusion for the present: I hope to send you word of them again. *Roses* have been subject to much blight this season.

It is an excellent honey season in these parts, though all I shall state about my bees now is, that I have a Payne's hive and a Fenn's Woodstock alliance hive working side by side. I have taken 20 lbs. of honey in supers from Payne's hive, and 40 lbs. of honey in supers from Fenn's hive—beautiful, first-rate honey.

A correspondent this week inquires something about "bee traps." I think I guess what he means. When I remove a super from the top of a hive I turn it upside down on a table removed a few yards away from the parent stock, and I then place over the orifice in the adapting board a dessert finger-glass. The bees make their exit in quantities up into the glass, which I lift off every few minutes, shake them into the air, and replace the glass quickly. Thus all the bees are got rid of in a short time to return to their home, and not one robber has the slightest chance to make his way, in the meantime, into the super, to steal the honey.

I am glad to read your veto on the Poland cock's comb question this week. We think a Polish cock minus a comb to be the acme of perfection, and we have a fellow now in our walk not to be despised for his appearance, though not one particle of comb has he got to his crown.—UPWARDS AND ONWARDS.

NOTES FROM THE CONTINENT.—No. 8.

BERLIN.

BERLIN possesses no market devoted exclusively to the products of the garden; but fruit and vegetables are sold in all the principal market-places. The most important of these is the one in the Gendarmes Platz, which every alternate day presents a most animated scene. The place is a very large square, the centre occupied by the Royal Theatre, on each side of which is a church. All three are fine buildings, and the houses stand back far enough to show them to advantage. Around and between these are stalls for the sale of meat and fish; china and glass ware; clothes, boots, and shoes; singing birds and poultry; butter, cheese, and bread; hay, straw, and corn; basket ware; and, lastly, fruit, vegetables, and flowers. Fruit pies and puddings being almost unknown in Germany, there is not so great a demand for the smaller fruits, such as Currants and Gooseberries, as one would at first expect to find in a city of 418,000 inhabitants. Cherries were in great abundance, and there were a few small Apples and Pears. One dealer had also some green Mulberries, and there were large quantities of Bilberries (the fruit of *Vaccinium myrtillus*), collected by children in the forest. None of the finer or indoor fruits were to be seen, no Pine Apples or Grapes, nor even Peaches or Plums. It would appear that there is rather more than an ordinary crop of most kinds of fruit this year in Germany, particularly of Apples. As with the fruit so with the vegetables, there was little of interest in either. New Potatoes were abundant and fine; there were also large quantities of Kohl-rubi, Cabbage Lettuces, young Carrots, Cucumbers, and a few Dwarf Beans. Plants in pots consisted of Fuchsias, Balsams, Myrtles, Hydrangeas, Ivy, a few sorts of summer annuals, and two species of small-leaved, dense-growing Peperomias. Ten-week Stocks formed the greater proportion of the cut flowers, but there were also some prettily-made-up bouquets. I was particularly struck with some bouquets made of Roses: between each Rose, and standing rather more prominently than they, were sprigs of the small white-flowered *Gypsophila elegans*. This old plant, which is a native of the Crimea, the Germans call "the Lady's Veil," and it is extensively grown for bouquet making by all the florists here. There were a few Cochinchina fowls for sale in the market, and it is worthy of remark that the taste for poultry-keeping, following as it frequently does that of gardening, is on the increase in this neighbourhood. At the Zoological Garden there is a collection of all the best sorts. A new work upon their management has just been published, and many persons have commenced keeping them.

When speaking in a former letter of the Thier Garten want of space prevented my alluding to another public pleasure ground on the opposite (eastern) side of Berlin. Its merits are far greater than those of the other place; the ground is somewhat undulating, and it is laid out with winding walks and beds of shrubs in very good taste. The worst feature in it is that the grass is so coarse, rough, and burnt. It is called Friedrichs Hein, after Frederick the Great, whose bust stands on a granite pedestal in the highest part of the ground. It has been laid out only eight or nine years. The victims of the revolution of 1848—that is, those who fell upon the democratic side—were here interred, and for several years afterwards the graves were regularly visited by the friends of the deceased upon the 9th of March; but, as it was thought impolitic to allow this display of feeling, the spot has been so thickly planted with dwarf Acacias that it is impossible to penetrate the thicket.—KARL.

PHOTOGRAPHY FOR GARDENERS.

"Science is a ladder set,
None have reached its top as yet;
Many steps have been attained,
Others shortly will be gained."

My friend and your correspondent, E. COPLAND, *Chelmsford*, has furnished some practical and economical instructions under the head of "Photography for Gardeners," showing how the portraits of plants may be easily taken;

and I know of no one better qualified for this task, but we want *colour* as well as *outline*. At p. 54 of your periodical he hints at Nature being a great photographer, and remarks that "the juices of many flowers and vegetables expressed in alcohol form an exceedingly sensitive surface when applied to paper." Now, these are points not to be lost sight of. I am no photographer myself; but having had my portrait taken the other day by a friend, it struck me, whilst the process was going on, that it was not strictly in accordance with the operations of nature. The impression was taken upon a prepared *dry surface*; the sun was at an angle above and somewhat behind my left ear; a large jam in the window of the room in which I sat partially intercepted its rays; and a body of reflected light fell upon my face from a white building opposite. When the portrait was obtained, which took about thirty seconds, I followed it to a room darkened with a yellow blind, where the lineaments were rendered more conspicuous by pouring on to the plate certain acids, and finally it was left for twenty-four hours to be soaked in water to render the impression complete. Nature acts differently. She produces *at once* the beautiful iris upon the spray of the fountain, the many-coloured rainbow upon the cloud, the *fata morgana* in the sea, and upon the humid atmosphere floating above it. Her sky pictures at sunset and others are specimens of Nature's photographic art; but then she imprints these *directly*, and upon a *moist* and not a *dry* medium.

Again, what is colour? Is it an inherent property in bodies, or simply the effect of light upon surfaces? and is not moisture in a greater or less degree essential to the production of these effects? Further, what is light? Does it emanate direct from the sun, or is it an independent and self-existent element, pervading all space and permeating all matter, and upon which the sun acts, making it luminous, in the same manner as the clapper of a bell does upon air to render it sonorous? Without air there would be no sound—a bell will not ring in a vacuum; and we read in Genesis that the sun was not formed till the fourth day after light was created. Now, we want more knowledge upon these points; a greater insight into first principles; a medium to be discovered so sensitive, impressible, and receptive, that it will imbibe and reflect all the colours of the rainbow. Then indeed should we have not only the *outline* but the *tints and markings* of the Tulip, the Fuchsia, and the Rose; then might florists transmit to each other in these days of postal improvement fac-similes of the flowers they raise, and the pages of THE COTTAGE GARDENER be embellished with occasional portraits of new plants, cheaply taken, and delineated to the life. I am sanguine enough to believe that this object in time will be accomplished. Let us only keep advancing. Progress has its rewards, and the failures of genius yield instruction. At every step we mount on the scientific ladder a new view will be brought within the horizon and compass of thought, and your correspondent, E. Copland, with his fellow-workers in the good cause, will have the satisfaction of feeling, on quitting the world, that he has left it wiser and better than he found it.—S. P., Rushmere.

PRESERVING WITHOUT SUGAR.

ALL the successful methods of preserving fruit without sugar, though perhaps empirically discovered, are based on principles which it cannot but be interesting and useful to understand. A few of these we will briefly state.

As a general rule no substance can ferment or decay without the presence of air and moisture, and a temperature above the freezing and below the boiling point of water.

Substances which contain no nitrogen, such as pure sugar, starch, gum, oil, &c., will not ferment or decay.

All nitrogenous compounds, under favourable circumstances, not only undergo rapid fermentation themselves, but have the power of disturbing the elements of non-nitrogenous bodies with which they are in contact.

A compact and insoluble nitrogenous substance is not as liable to ferment, or to induce fermentation in other bodies, as one which is porous and soluble.

Heat renders many nitrogenous substances more compact, and otherwise retards fermentation. For instance,

fresh milk soon curdles in a warm room; its nitrogenous ingredient, caseine, or curd, absorbs oxygen from the air, and ferments, and in this state rapidly converts the sugar of milk into lactic acid. This acid neutralises the soda which holds the caseine in solution, and the milk becomes curdled. Now, it is well known that if milk is boiled it will keep sweet much longer. In fact, if milk is boiled every day it may be kept sweet for an indefinite period.

All fruits contain a nitrogenous substance, generally albumen (the white of egg) or gluten. In a perfect fruit this is separated from the sugar, starch, gum, and other non-fermenting ingredients of the fruit by cellular matter. In compact fruits, too, such as the Apple and Pear, the skin protects the albumen from the atmosphere to some extent, and it is, therefore, but slowly decomposed. Crush the Apple, and the albumen, being brought in direct contact with the atmosphere and with the sugar, rapidly absorbs oxygen, and induces decomposition. The porous fruits, such as the Strawberry and Raspberry, have little cellular matter or skin to protect the albumen from the air, and hence, though the fruit remains in tact, decomposition soon sets in. In the former case Nature partially excludes the air, and thus the preservation of the fruit is easy; in the latter the air must be excluded by artificial means, and hence the preservation of the fruit is attended with considerable difficulty.

The oxygen of the air is undoubtedly the exciting cause of decomposition; but it would appear that, under certain circumstances, when the albuminous matter of the fruit has commenced to decay, the exclusion of atmospheric air does not completely arrest it—probably the water of the fruit is decomposed, and thus furnishes oxygen. To preserve fruit, therefore, we must not only exclude atmospheric air, but must arrest decomposition before the fruit is sealed up. *The only practical way of doing this is by the application of heat.* This fact has been generally overlooked by writers on this subject. Couverchel made numerous experiments on the preservation of fruits *in vacuo* and in nitrogen, and the results led him to the conclusion that "the *taste* of fruits cannot, under any circumstances, be preserved." Mulder, another eminent chemist, is of the same opinion, and says: "Apples sent from Holland to India, packed in vessels free of air, became perfectly tasteless, although not a trace of putrefaction could be perceived." The fact that Gooseberries, Currants, Cherries, Peaches, and other fruits, have been preserved without sugar by expelling the air from the vessels containing them, and which retained their flavour but little if any impaired, cannot be doubted. The failure of these chemical experiments is attributable, in all probability, to the cause we have alluded to. It is essential to cook the fruit sufficiently to arrest all decay, and to coagulate the albumen before the vessels are sealed.

A lady who has had considerable success in preserving Cherries without sugar has kindly furnished us with the following recipe:—"Take the common red Cherries, and remove the stones. Put them in wide-mouthed, light glass bottles. Then set the bottles in a boiler of cold water, within an inch or so of the neck. Let them boil from fifteen to twenty minutes. Put the corks in the bottles as tightly as possible while the water is boiling. Then take out the bottles, tighten the corks, and seal them with a wax made of equal quantities of rosin and beeswax."

This method has proved quite satisfactory. The *rationale* of the process will be readily perceived. The heat coagulates the albumen of the fruit, and arrests all change which may have taken place by the absorption of oxygen, and at the same time expels the air from the bottles. The corks, being put in while the bottles are filled with steam, and quickly tightened and sealed, effectually exclude the air, and with it all exciting cause of fermentation. The reason why the bottles are placed in cold water is to prevent them from breaking. If tin cans are used there will be no need of this precaution. Sometimes, too, the bottles break after being taken out of the water, and it is advisable to wrap a cloth around them for a few minutes.

Green Gooseberries and Currants may be preserved in the same way, except that they do not need so much boiling. If the bottles are heated sufficiently to drive out most of the air by expansion, and carefully corked and sealed while hot, nothing more will be required. In fact, they are

sometimes kept by simply putting them in tightly-sealed bottles without any boiling. In this case the Gooseberries, not being ripe, absorb the oxygen from the small quantity of air in the bottles without injury. If the bottles, after being sealed, are placed in hot water for a few minutes this absorption of oxygen takes place much more rapidly with the formation of carbonic acid. Unless the fruit is quite green the former method is undoubtedly the best.

Green Peas can be preserved in the same manner as Gooseberries and Currants.

Green Gooseberries are frequently preserved by placing them, when dry, in a stone jar or other vessel, and burying it in the soil below the reach of frost.—(*The Genesee Farmer.*)

THE CRUCIFERÆ, OR CROSS FLOWERS.

From Hogg's *Natural History of the Vegetable Kingdom.*

(Continued from page 240.)

"BRASSICÆ.—Of all the tribes of the Cruciferae this is by far the most important, as it contains a number of plants which both in themselves and their products occupy a prominent position in agriculture, commerce, and in domestic economy. It is properly the *Cabbage Tribe*.

"On Dover cliffs, and in many places on the coast of Dorsetshire, Cornwall, and Yorkshire, may be seen a wild plant with variously indented, much-waved, and loose, spreading leaves of a sea-green colour, and large yellow flowers. In spring the inhabitants collect the leaves of this plant, and, after boiling them in two waters to remove the saltiness, use them as a vegetable along with their meat. This is *Brassica oleracea*, the *Wild Cabbage* or *Colewort*, from which have originated all the varieties of Cabbage, Greens, Cauliflower, and Broccoli. It would be quite beyond the intention of this work to enter minutely into a treatise on all the varieties of the Cabbage tribe which are cultivated in gardens, and neither shall we do so; but as it is a subject which is no doubt interesting to many to know somewhat of the arrangement and distribution of these plants, we shall devote a short space to that purpose. Starting with the Wild Cabbage as it is found on the sea-cliffs of this country, we have the plant in its simplest and normal form. In this state it is the true *Colewort* or *Collet*, although the name is now applied to any young Cabbage which has a loose and open heart. Brought into cultivation, we have it improved in character, though still with the loose open leaves, and in this form it is called *Greens*, *Kale*, or *Borecole* (*B. oleracea acephala*). Of these there are many varieties both as regards the form and colour of the leaves, and the height of the plants, and among them are included the *Thousand-headed* and the *Cow* or *Tree Cabbage*. Advancing a step farther in improvement, we find it assuming the headed or hearting character, and with blistered leaves; then it is known by the name of *Savoy*s and *Brussels Sprouts* (*B. o. bullata*). Another of its headed forms, but with smooth glaucous leaves, is the *Cultivated Cabbage* of our gardens (*B. o. capitata*), and all its varieties of green, red, tall, dwarf, early, late, round, conical, flat, and all the forms into which it is possible to squeeze it. A more singular development is that presented by *Kohl-Rabi*, or, as it is sometimes called, *Turnip Cabbage* and *Knol-Kohl* (*B. o. caulorapa*), wherein the stem swells out like a large turnip on the surface of the ground, and from which the leaves proceed all round it, the top surmounted by a large cluster of leaves issuing from it. Although not generally grown as a garden vegetable, if used when young and tender, it is wholesome, nutritious, and very palatable. The only other forms which the Cabbage presents in a cultivated state are those in which we find it under the names of *Cauliflower* (*B. o. botrytis cauliflora*) and *Broccoli* (*B. o. botrytis asparagoides*), both of which are so well known as not to require any further remarks.

"*B. campestris* represents, also, several very important plants, and is known by the names of *Wild Navew* and *Colza*. In this its simplest form it is extensively cultivated in the north of France, Holland, and in Belgium, for its seeds, from which is expressed a valuable oil called *Colza Oil*. It is also grown in England for the same purpose.

Colza Oil is much used for burning in lamps, for which it is well adapted, as it produces very little smoke; for scouring cloths, and for domestic purposes. It dries slowly, soon becomes rancid and acrid, and furnishes a soft soap. It contains in a hundred parts forty-six of stearine and fifty-four of oleine. The *Swedish Turnip*, now so extensively cultivated as an agricultural crop, is a form of this plant more fully developed, as is also the *Turnip-rooted Cabbage* (*B. c. napo-brassica*).

"*B. rapa* is the origin from which the cultivated *Turnip* has sprung, whether of the field or garden varieties. In its wild state it furnishes an oil similar to that of Rape and Colza, but it is less productive in this substance than these are, and is therefore only grown because of its adaptability to poor soils, on which they do not luxuriate. The use of the Turnip in its cultivated state is too well known to require any description.

"*B. napus* is the common and cultivated *Rape* or *Coleseed*. This plant is extensively cultivated for its herbage, which furnishes an excellent winter food for sheep; and for its seeds, from which is obtained the oil called *Rape Oil*, so extensively used for machinery, the residue, after the oil is expressed, being known among farmers as *Rape Cake*. This cake was used formerly for feeding cows, pigs, and calves during winter; but it is now more highly esteemed and exclusively used as a valuable manure, from the great quantity of nitrogen which it contains. There is a variety of this, called by the French *Chou Navette*, and by us *French Turnip* (*B. n. esculenta*), which is employed in flavouring all the foreign soups. Stewed in gravy it forms a most excellent dish, and being white and of the shape of a carrot, when mixed alternately with those roots on a dish they are very ornamental.

"*Sinapis nigra*, or *Black Mustard*, grows wild in many parts of this country in corn-fields and by waysides; and *S. alba*, or *White Mustard*, is a native of the south of Europe, but now naturalised in many parts of this country. It is from the ground seed of these two species that *Flour of Mustard*, so much used as a condiment, is obtained. The original *Durham Mustard* was made from the ground seed of *S. arvensis*, the common wild *Charlock*, which grew very plentifully in the neighbourhood of that city; and in places where it abounds its seed is still collected and sold for the purpose of mixing with the black and white. White Mustard is grown very extensively in the fens of Lincolnshire and Cambridgeshire, in Essex and Kent, but the greater bulk is produced in the fens of the two former counties. Used medicinally Mustard seed swallowed whole is laxative, and a remedy in dyspepsia and other complaints attended with torpid bowels and deficient excitement. The bruised seeds or powder, in the quantity of a large tea-spoonful, operate as an emetic. In smaller quantities it is a safe stimulant of the digestive organs; and, as it is frequently determined to the kidneys, it has been beneficially employed in dropsy, administered in the shape of a whey, made by boiling half an ounce of the bruised seeds or powder in a pint of milk, and straining, and a wine-glassful to be taken several times a day. But it is mainly as a rubefacient that Mustard is most highly prized. Mixed with water in the form of a plaster, it very soon produces redness with a burning pain, which, if continued, becomes insupportable. When speedy or violent action is not required it is generally mixed with rye meal or wheat flour, and care should be taken not to allow the application to continue too long, as blistering with obstinate ulceration may result. Mustard is very rarely to be obtained pure, it being always more or less extensively adulterated; but, as the substitutes are generally of a harmless description, no alarm need be excited on that account, the result being merely less acridity and pungency. Rape seed, Turnip seed which is too old to vegetate, wild Radish, and wheat flour are the principal ingredients; the last is generally added after the seed is ground, but the others are ground along with it. An oil is obtained from the seeds by expression, and called *Oil of Mustard*, which has the same properties as those of the other plants of this family. It is of a greenish-yellow colour, with little smell, and a mild and not unpleasant taste, and yields on saponification an acid for which the name of *Erucic Acid* has been proposed. When the seeds have been pressed and all the fixed oil has been extracted, the residue left behind is much more

pungent than the unbruised seeds, and it is from this that the *Volatile Oil of Mustard* is obtained. This is a colourless or pale yellow liquid, rather heavier than water, of an exceedingly pungent odour, and acrid, burning taste, and having sulphur among its essential constituents. It is powerfully rubefacient, capable of speedily raising blisters, and is used by dissolving thirty drops in a fluid ounce of alcohol, or six or eight drops in a fluid drachm of olive or almond oil. In over-doses it is highly poisonous; its odour is perceptible in the blood, and it is said to impart the smell of Horse-radish to the urine. It is from the presence of this volatile oil that the odour and pungency of mustard arises; and as it does not exist ready formed, but is produced by the agency of water, hence it is that dry mustard is destitute of both taste and smell till it has been moistened. The peculiar principles in Black Mustard seed, and in those of the White also, though in a less degree, are *Myronic acid*, which exists in the seeds in the state of *Myronate of potassa*; *Myrosyne*, closely analogous in character to the albuminous constituent of almonds, called emulsin; and *Sinapisin*, a peculiar crystalline principle, which, on contact with water, and the albuminous principles of the seed, emits the odour of the oil of mustard. *Myronic acid* is a fixed, inodorous substance, of a bitter and sour taste and acid reaction. It contains sulphur, nitrogen, carbon, hydrogen, and oxygen. *Myrosyne*, when dry, has the character of an albuminous substance; is soluble in water, forming a viscid solution, which froths when agitated, and is coagulated by heat, alcohol, and the acids. *Sinapisin* is in brilliant, white, scaly crystals, sublimable by heat, soluble in alcohol, ether, and the fixed and volatile oils, but insoluble in acids and alkalies. The peculiar ingredient in White Mustard seed is *Sulpho-sinapisin*, a white, crystallisable, inodorous, and bitter substance, soluble in alcohol and ether, and forming a yellow solution. The *Oil-cake of Mustard* requires to be given to cattle with great caution, as it is somewhat purgative, and is generally sprinkled on their chaff. The Flour of Mustard used in this country is obtained chiefly from the seeds of White Mustard, while that of France is procured from the Black; hence it is that French Flour of Mustard has always a dark appearance, and a great mixture of dark-coloured specks, arising from the presence of the dark skins of the seeds.

"*Eruca sativa*, Garden Rocket, has an acrid and bitter taste, exhaling a strong, disagreeable smell when bruised. It is stimulant and antiscorbutic; the seeds are very acrid, and produce blisters when bruised and applied to the skin.

"**RAPHANÆ.**—To this tribe belong two well-known garden plants—the *Sea-kale* and the *Radish*. *Sea-kale* (*Crambe maritima*) is a native of the sea-shore and cliffs of the south and west coasts of England; and for centuries before it was known, as now, at the tables of the great and wealthy, it was an object of special regard in the humble dwellings of the south-coast fishermen. Clambering up the cliffs, and swinging themselves, by means of ropes, over precipitous heights, they encountered any amount of danger to obtain, in spring, the tender shoots of that delicious vegetable as they were just emerging from the sand and shingle in which they grew. The root of *C. Tatarica*, called *Tartar bread*, peeled and sliced, is eaten in Hungary, with oil, vinegar, and salt. *Wild Radish* (*Raphanus raphanistrum*) is very plentiful among corn; it is often mistaken for Charlock, by which name it is not unfrequently called, but from which it is easily distinguished by its white and sometimes purplish flowers. Linnæus attributed a disease with which the common people in Sweden were attacked to the seed of this plant being ground along with the corn, and then eaten; but there is no reason for supposing that the plant possesses any deleterious properties; on the contrary, it has been shown that it is perfectly harmless, and has been recommended as a nutritious food for domestic animals. The roots of *R. maritimus*, the *Sea-Radish*, are said to be preferable to Horse-radish.

"In treating of this great family of the Cruciferae, we have only noticed those tribes which furnish subjects of interest as regards their properties and uses; the others, in which we find no such subjects, we have passed over."

QUERIES AND ANSWERS.

BEEES IN NUTT'S HIVE.

"My stock of bees, hived the 16th of May in Nutt's collateral hive, have not yet (August 1st) commenced their operations in the glass above, although the combs appear to have quite filled the centre box. Can you tell me what should be done to encourage them to ascend, as I begin to fear I shall have no honey this year? There are three circular holes, one inch and a half in diameter, for communication."—AMATEUR.

[Your centre box being filled with combs and honey, it is not very probable that the bees, now that the season is pretty well over, will need a glass super. They are the best judges of their own requirements, and no "encouragement" will avail anything. In many of Nutt's hives the centre box is larger than is desirable, at least in second-rate localities; and why should the family be expected to take possession of useless space beyond it? We observe that some of our correspondents advocate large hives, on the principle that the greater the capacity of the hive the more honey is to be taken from it. It is all very well to think of such in the immediate neighbourhood of the moors, with two honey harvests in the year, but these are exceptional cases. In general it is best to be satisfied with hives or boxes of moderate capacity. In winter, with diminished numbers, a large habitation is not essential. In the spring it will tend, undoubtedly, to retard, or sometimes prevent swarming; but, at the same time, its effect is to indispose the bees to take possession of a super or side box as early as is desirable, and thus the prospect of a good harvest to the proprietor is diminished rather than increased.]

TO CORRESPONDENTS.

ABUSIVE ATTACKS (P. H. D.).—We have seen the remarks you allude to, and it is quite possible that they refer to the work you mention. We are not at all surprised at the jealous feeling, but we are surprised that a man who never wrote an original work in his life should have the impertinence and folly to make use of such language. His own work to which you allude is little more than a paraphrase and copy of *Endlicher's Enchiridion*.

FINING WINE (G. B.).—Gelatine, which may be bought for 3d. or 4d. an ounce, is quite as useful as isinglass for this purpose.

MELON LEAVES DESTROYED (W. C.).—Red spider, we conclude from your description, has been your enemy. The air of the pit has been too dry, too hot, and too little ventilated. Moisture, shade, air day and night, with sprinklings of flowers of sulphur, would have saved you from disappointment.

NAMES OF PLANTS (Sophia).—1. *Polystichum acrostichoides*. 2. *Polystichum acuminatum*, a forked variety of No. 1.

CLUB ROOT (A. B. C.).—We are making some inquiries about this disease of the Cabbageworts, and will let you know the result probably next week.

ERECTING A GREENHOUSE (W.).—You will find estimates and plans in our manual, "Greenhouses for the Many."

FLOWERS FOR GREENHOUSE, &c. (A Constant Reader).—If you will consult our last two volumes you will find copious lists of plants for each month in the year. In your case have Balsams, Fuchsias, scarlet and other Geraniums, along with Begonias, for autumn, September, and October; Chrysanthemums for November; Camellias, Epacrises, Cytisuses, Coronillas, and bulbs, on to spring, and as many of the things from the lists as you can find room for. It will be time enough to put your Violets under glass in the middle of October. The whole culture has been frequently given. Write to the publishers of the work you mention.

GYPSON AS A MANURE (Timothy Steward).—The quantity per acre for your Lucerne should be two cwt. Be sure and apply it during damp weather, it being all the better if the white powder sticks to the leaves. You may apply it now to your Lucerne, but to Clover in the spring. We cannot answer your question as to the price of Lucerne, it so varies with quantity and locality.

AUTUMN-SOWN ANNUALS (W. M'Gowan).—We shall devote a page to this subject shortly, and in time for this season. The principal conditions are, a west aspect, sheltered from the north and east winds, but not shaded in the least, the soil to be light, dry, and not to be dug on any account, merely stirred with a hoe to the depth of two inches, and to be free from the seeds of weeds.

DOUBLE WHITE GERANIUMS (J. D. V.).—The value of a new Geranium cannot be fixed without a knowledge of the habit of the plant. Those who have faith in the superior qualities of their seedlings exhibit them at public shows. A seedling taking a prize at Chiswick, or at the Regent's Park or Crystal Palace Shows, is sure to sell well generally; and if it is a florist's flower, and receives a prize at one of their Meetings in St. Martin's Hall, London, it will be run after principally by florists.

A double white Geranium, to be of any value, should be a stiff, close grower, an abundant bloomer, and continue in bloom from May to September or October, so as to make a border plant, if not a bedder. Scores of a most beautiful double white Geranium have been sold for the last two years by the Messrs. Jackson, of Kingston, at the same price as common sorts. We had one of them last year gratis, and considered it too dear even at that rate, as it only bloomed for a month or six weeks, and the plant was a loose, straggling grower. If you could get up your kind in good time for the Crystal Palace Show next month its real value would be stamped there.

VARIOUS (*Margaret N. B. Clough*).—The Golden Sedum is only a variety of *S. acre*. We have it now. The leaf is that of one of the Australian Gum trees, *Eucalyptus* species. It requires a great deal of room, to be kept from the frost, and all the beauty is in the leaves and style of growth. Stocks are very difficult to strike from cuttings, and very useless when they do strike, as one seedling plant is worth six got from cuttings. Your porch is the worst place about the house for a *Camellia* without roots, being too dry and draughty for it. It should stand in a sheltered place out of doors till the middle of September, and not see the sun but morning and evening. The pot should stand on two bricks a little asunder, and two sticks should be driven in the ground close to the pots and opposite, the top of the plant to be tied to both sticks. A moderate watering will do. The soil to be of sandy loam and turfy peat in equal parts.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

AUGUST 26th. BRADFORD. Secs., M. Brooksbank and H. Beldon, Esqs., 12, Queensgate Street, Bradford. Entries close August 18th.
AUG. 29th. CALDER VALE. Sec., W. Irvine, Esq., Holmfild, Halifax. Entries close August 15th.
SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.
SEPTEMBER 4th. SOWERBY BRIDGE. Sec., F. Dyson, Esq. Entries close August 26th.
SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Sec., Mr. H. Churchill, King's Head Hotel.
SEPTEMBER 9th. HECKMONDWIKE. Secs., Mr. G. H. Rhodes and Mr. Fred. Brearley. Entries close August 31st.
OCTOBER 1st and 2nd. WORCESTER. Sec., Mr. G. Griffiths, 7, St. Swithin Street, Worcester. Entries close Sept. 19th.
OCTOBER 7th. SOUTH WEST MIDDLESEX AGRICULTURAL SOCIETY. At Gunnersbury Farm, Ealing. Sec., J. Gotelee, Hounslow.
NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.
DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.
DECEMBER 30th and 31st. BURNLEY AND EAST LANCASHIRE. Entries close December 1st. Secs., Mr. Angus Sutherland and Mr. Ralph Landless.
JANUARY 4th, 1858. KIRKCALDY POULTRY AND FANCY BIRD SHOW. Sec., Mr. Bonthron, jun., Thistle Street.
JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.
JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.
FEBRUARY 3rd and 4th, 1858. PRESTON AND NORTH LANCASHIRE. Secs., Mr. R. Teebay and Mr. H. Oakey, Preston.
N.B.—Secretaries will oblige us by sending early copies of their lists.

CRYSTAL PALACE POULTRY SHOW.

OUR notice of this beautiful Show was, of necessity, somewhat hurried last week, for that notice was obliged to be printed before the Show was concluded. It closed on Wednesday, and our paper was issued, as usual, on Tuesday.

The progress of poultry would seem to justify us in saying that, however a prize-list may be framed, and whatever its requirements may be, if time be granted to amateurs they will fill up the classes with excellent specimens. There was but one weak class, and that was the *Golden Poland*. It was almost difficult to walk round the pens and believe we were only in the early days of August, and that all the birds were the produce of this year.

The *Spanish* chickens were excellent, but the difficulty of finding two forward pullets was apparent in many pens. Exhibitors should remember that a falling comb is now-a-days a disqualification in a *Spanish* cock: there were several in the single class. The *Dorkings* were not only the most numerous, but they were the best class. They alone would have formed an exhibition, and here all the great names met. The Rev. Stephen Donne sent four pens, all of which figured in the prize-list.* He was hard run by Capt. Hornby, who sent the finest young cock we have seen this year: his pullets lacked condition. The weight of the chickens here was quite equal to that of adults a few years since, and a perusal of the names of those distinguished in this very capital class will be a guarantee that we do not overrate it. The *White Dorkings* were very good, but the single cock class

* We may here mention that when an exhibitor takes a prize we do not mention his being commended in the same class.—ED. C. G.

was inferior to the others. We looked with pleasure at the *Cochins*. Every colour was represented by birds such as we have not seen of late, and we anticipate great things from the winners if they redeem the promise of their youth. They were large, good in colour, and sent in very fine condition. If we were to particularise among good birds we should name the Rev. G. F. Hodson's Grouse, Messrs. Stretch and Kellaway for Buff, and Mr. Fowler and Mrs. Herbert for White.

The Judges were compelled to declare the *Brahmas* an unusually good class. Mr. Botham was deservedly successful.

We have never seen *Game* sent in better condition, and that is saying a great deal. Mr. N. de Rothschild's White, Dr. Sewell's Black-breasted Reds, and Mr. W. Cox's single cock were all perfect. Mr. Marriott also took two prizes worthily with excellent birds. Another pen of unusual merit was also shown by Dr. Sewell, but the cock had a large tumour extending the length of his breast.

The *Golden-pencilled Hamburgs* were very good, and the first prize pen found a purchaser at ten guineas. Mr. Clayton took two prizes.

The *Siller-pencilled Hamburgs* afforded another triumph to Mr. Archer; his three pens took first and third prizes, and a high commendation. Mr. Botham and the Hon. W. W. Vernon also showed beautiful birds. We never saw these two classes surpassed at an early show.

The single cocks were not so good, but we think exhibitors do wisely to send their best birds in the general classes. The *Game* were the only classes in which exhibitors seemed to have plenty of perfect cock birds.

Mr. Thompson, of Windsor, took his old place deservedly among the *Spangled Hamburgs*, taking two first and one second prize. They were excellent birds, and superior to their Silver brethren. In this latter breed clear tails have become essential, and the penalty of getting them is being paid in a loss of body colour. The moons or spangles are not accurately defined, and the hackles are too white. Mr. Carter's were good birds.

The next was an unusually attractive and meritorious class—*Black Polands*. Here the old stars faded, and Mr. Fox, of Wellington, won the first and second prizes easily with perfect birds.

The *Silver Polands* maintained the improvement we have noticed of late, and Messrs. Jones and Adkins will be hard to beat at the later shows.

The *Malays* were again a wonderful class. The first prize chickens were beautiful, as were many of the others. There was here a trifling oversight of the Judges—one of the pullets had five small claws on one foot. It was discovered by a close competitor for the second prize, and we are bound to do him the justice of thanking him for the liberal way in which he *privately* mentioned it, admitting the birds formed a beautiful pen, and saving the defect, which he said would escape any one, they richly deserved their honours.

We were surprised to see so many good *Bantam* chickens. The Hon. W. W. Vernon took two first and one second prize; Messrs. Spary and Leno also took first prizes. The *Game Bantams* formed the best class we have yet seen, and they threaten to become the most important of these breeds. The Judges declared that they deserved a "general high commendation."

The *Ducks* and *Geese* were very good, but, as their time has been evidently devoted to growth instead of flesh, they did not weigh as well as they will later. The *Geese* weighed 43½ lbs., 40 lbs., and 39 lbs. the pen, and the *Ducks* 18 lbs. and 17 lbs. The *Rouens* were very numerous and good. They did not weigh so heavy as the *Aylesbury*. The various class was well represented, and the first prize *Black* were excellent.

This brings us to the end of our remarks on the birds shown. It only remains for us to say that the Show was every way successful, and reflects the greatest credit on Mr. Houghton. While we congratulate him we tender our thanks for his courtesy.

KEEPING POULTRY PROFITABLY.

THERE is a prevalent idea now, and one I saw expressed in a letter a short time back in your columns, that poultry-keeping is troublesome and unprofitable. I have often heard

people say that they have given up keeping fowls in disgust at their disappointments and losses. Now, if you will grant me a space in your excellent paper, as you have often kindly done before, I will endeavour to show how poultry may be pleasantly, easily, and profitably kept. Let us take the case of a person who has never kept fowls before, and wishes to do so chiefly to insure himself a supply of new-laid eggs in the ensuing winter. I take it for granted that he is a Londoner, and has but little space. Well, half a dozen fowls will amply supply him if he attends to the following advice, which is founded on experience:—

In the first place he must have a fowl-house. Now, any shed can be very easily converted into a capital fowl-house, so long as it is dry and warm. If there is no such shed a little wooden house can be erected for about ten shillings or less. Then I suppose that he has a little yard which will answer as the fowls' run. Now, having got his house, he must get his fowls. Let him buy, then, four young Cochin pullets, hatched about March of the year in which he buys them (let him buy them in September), and let him buy a coloured Dorking pullet and Spanish pullet of the same age, while the cock, a two-year-old bird, should be either Cochin or Spanish. The Cochins will lay most profusely, beginning about November, and keeping on through the winter. The Dorkings will hatch and rear the broods, and the Spanish will lay few, but large eggs. I should recommend a Spanish cock to be kept with these fowls if the neighbours do not wish to be awakened at the first peep of light by the tremendous crow of the Cochin; but still, if a Cochin is preferred, every one to his fancy. The fowl-house must be kept very clean and sweet, and comfortable straw nests made inside, and the perches should be eighteen inches from the floor. They (the perches) may be flat pieces of plank two inches wide, or rough branches. Sometimes straw is bound round them; *mais cela n'importe*. Let me again say that cleanliness is the great thing in fowl-keeping—it is the *magnum bonum*.

Now, as to food, fowls seem to reverse the sentiment, "We must eat to live, and not live to eat," for they are always asking for food. Barley, oats, and barleymeal are the three chief ingredients in fowls' food. A quart and a half of barley is an ample feed per diem for seven fowls. In the winter give a quart of barleymeal in the evening, mixed with hot water and well peppered, and in the morning a pint of barley; but abstain from greaves, hempseed, or peas, as you would from poison. Treat your fowls thus, letting them have green food, and you will succeed in poultry-keeping.—A WILTSHIRE POULTRY-KEEPER.

RETENTION OF VITALITY BY AN UNHATCHED CHICK.

I AM about to relate a fact, which, as it occurred among my own poultry, I can vouch for its veracity. There was an egg laid between two and three weeks ago which has served the purpose of nest egg, and was sat upon for about eight days at the first part of that time. Since then it has been sat upon alternately by two hens going into the nest to lay. Last Tuesday evening I happened to take the egg and break it, and a half-formed chicken fell to the ground. After the space of about two minutes, to my great surprise, the chicken, which I supposed to be stone dead, moved, contracted its limbs, and gave a convulsive start. After that I distinctly saw it move twice, and then expire. I cannot in any way account for its having retained life so long, as it has often been many hours in the nest without any hen upon it. Among your numerous correspondents have any of them ever come across a similar case?—J. T. DUNCAN, *Fareham, Hants.*

POULTRY AT THE YORKSHIRE AGRICULTURAL SOCIETY'S SHOW.

THIS Show was held at York on the 5th and 6th instant. The show of poultry was large and good, and almost every pen afforded proof of the rapid strides that have been made of late years in the improvement of the denizens of the poultry-yard. It will be seen from the following prize-list that many of our best exhibitors competed. The Judges

were the Hon. and Rev. S. W. Lawley, of Escrick, and the Rev. R. Pulleine, of Kirby Wisk.

SPANISH.—First, Mrs. J. C. Hall, Surrey House, Sheffield. Second, W. Brown, Howden, Selby. **Chickens.**—Prize, J. Dixon, North Park, Bradford.

DORKINGS.—First, S. Burn, East Terrace, Whitby. Second, G. Hustler, Appleton, Tadcaster. **Chickens.**—Prize, H. W. B. Berwick, Helmsley, York.

COCHIN-CHINAS (Black or White).—First, J. Alcock, Hull. Second, W. Dawson, Hopton Mirfield.

COCHIN-CHINAS (not Black or White).—First, T. H. Barker, Hovingham, Malton. Second, J. Braddock, York. **Chickens** (of any colour).—Prize, T. H. Barker, Hovingham, Malton.

GAME.—First, J. Robshaw, Whixley, Knaresborough. Second, G. Hutchinson, Prospect House, York. **Chickens.**—First, J. Smith, Guiseley, Leeds. Second, C. White, Ruswarp, Whitby.

HAMBURGHS (Golden-spangled).—First, J. C. Raw, Ainderby Vicarage, Northallerton. Second, J. Dixon, Bradford. **Chickens.**—Prize, Georgiana Mollitt, Bolton Percy, Tadcaster.

HAMBURGHS (Golden-pencilled).—First, J. Crabtree, Branch Shipley. Second, J. Dixon, Bradford. **Chickens.**—Prize, Jane Hollings, Horton, Bradford.

HAMBURGHS (Silver-spangled).—First, Messrs. Bird and Beldon, Eccleshill Moor, Bradford. (No second prize awarded.) **Chickens.**—Prize, Mrs. H. Sharp, Bradford.

HAMBURGHS (Silver-pencilled).—First, J. Dixon, Bradford. Second, T. Poulter, Hopperton, Knaresborough. **Chickens.**—Prize, Mrs. H. Sharp, Bradford.

POLANDS (any variety, with or without ruffs).—First, J. Dixon, Bradford. Second, Holloway and Winter, Hull. **Chickens.**—Prize, J. Dixon, Bradford.

ANY DISTINCT BREED NOT PREVIOUSLY MENTIONED.—Prize, J. Dixon, Bradford. **Chickens.**—Prize, W. Dawson, Hopton Mirfield.

BANTAMS (Black or White).—First, W. Dawson, Hopton Mirfield. Second, J. Dixon, Bradford.

BANTAMS (not Black or White).—First and Second, J. Dixon, Bradford.

SINGLE COCKS.—*Spanish Cock.*—Prize, J. Dixon, Bradford. *Dorking Cock.*—Prize, W. Burn, Whitby. *Cochin-China Cock.*—Prize, J. Duggleby, York. *Game Cock.*—Prize, Mrs. H. Sharp, Bradford. *Gold-spangled Hamburg Cock.*—Prize, W. G. Perfect, Townhead, Skipton. *Golden-pencilled Hamburg Cock.*—Prize, W. Horner, Newsome Bar, Thirsk. *Silver-spangled Hamburg Cock.*—Prize, Bird and Beldon, Eccleshill Moor, Bradford. *Silver-pencilled Hamburg Cock.*—Prize, J. Dixon, Bradford.

GESE.—Prize, B. H. Brooksbank, Tickhill, Rotherham.

DUCKS (Aylesbury).—First and Second, Mary Taylor, Sewerby Cottage, Bridlington.

DUCKS (any other breed).—First, B. H. Brooksbank, Tickhill, Rotherham. Second, T. H. Barker, Hovingham, Malton.

TURKEYS.—Prize, E. Appleyard, Weston Lordship, Selby.

PROLIFIC AYLESBURY DUCKS.—On the 28th of April last year (see THE COTTAGE GARDENER, Vol. XVI., page 108), I wrote to inform you that two ducks of the White Aylesbury breed had then laid 139 eggs: before they left off they laid 256 eggs. This year they begun to lay on the 13th of February, and have, to the present date, July 30th, laid 236 eggs, and have not finished yet, although they are beginning to moult.—J. WICKETTS, at Miss Dorvilles, Highcroft, Great Malvern.

LONDON MARKETS.—AUGUST 17TH.

COVENT GARDEN.

An excellent supply of both Fruit and Vegetables, fully equal to suit the terms of all classes of buyers, which have been numerous during this real summer weather. Importations comprise *Greengages*, *Orleans* and *Precoce de Tours Plums*, *Endive*, *Artichokes*, and *Tomatoes*; and several cargoes of *West India Pines*, sometimes 40,000 a day, have changed hands at the brokers during the past fortnight, the season for which, however, will soon be over.


POULTRY.

The continued hot weather renders quotations difficult. The last week has inaugurated the Grouse season. We have been unable to form any opinion from the supply hitherto received; but our impression is unaltered that it will not be found a good season in Scotland. The first few birds that arrive make large prices. These generally go to the Yorkshire moors, and to those sportsmen who will take the trouble to send off their birds on the afternoon of the 12th. Any average is difficult during the first few days.

Large fowls	5s. 0d. to 6s. 0d. each.	Grouse	.... 3s. 6d. to 5s. 6d. each.
Smaller do.	3s. 6d. to 4s. 0d. "	Pigeons	..... 7d. to 8d. "
Chickens..	2s. 3d. to 3s. 0d. "	Rabbits ..	1s. 4d. to 1s. 5d. "
Geese	6s. 0d. to 6s. 6d. "	Wild ditto	..... 8d. to 9d. "
Ducks	3s. 0d. to 3s. 3d. "	Leverets...	3s. 0d. to 3s. 6d. "

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—August 18, 1857.

WEEKLY CALENDAR.

D M	D W	AUGUST 25-31, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
25	TU	Southernwoods (Artemisia).	29.983-29.812	66-52	S.W.	02	3 a. 5	1 a. 7	8 34	6	1 53	237
26	W	PRINCE ALBERT BORN, 1819.	29.929-29.901	76-55	W.	—	5	VI	8 51	7	1 37	238
27	TH	Cudweeds (Gnaphalium).	29.824-29.755	77-52	W.	—	6	57	9 16		1 20	239
28	F	Fleabane (Erigeron).	29.848-29.773	71-53	S.W.	07	8	54	9 52	9	1 2	240
29	S	Golden-rod (Solidago).	30.144-29.888	76-40	S.W.	—	9	52	10 40	10	0 45	241
30	SUN	12 SUNDAY AFTER TRINITY.	30.151-29.967	74-54	S.	—	11	50	11 46	11	0 27	242
31	M	Elecampanes (Inula).	29.931-29.874	77-40	S.W.	05	13	48	morn.	12	0 8	243

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 71.8°, and 49.6°, respectively. The greatest heat, 84°, occurred on the 30th, in 1854; and the lowest cold, 32°, on the 29th, in 1850. During the period 122 days were fine, and on 74 rain fell.

NOTES ON NEW OR RARE PLANTS.

CLERODENDRUM FETIDUM (Stinking Clerodendrum). Nat. ord., *Verbenaceæ*.—A native of China, and introduced into this country by Mr. Fortune. Stem shrubby, erect, round, the younger parts purple and downy. Leaves opposite, on long petioles, broadly cordate, acuminate; veins prominent and reticulated; margins dentato-serrate, downy on both sides, and dark green. Calyx a short five-toothed tube, cylindrical. Corolla four times longer than the calyx; limb deeply divided into five obovate lobes; purple. Inflorescence a large, compound, terminal corymb of hemispherical form, with numerous branches and pedicels.

This is a plant deserving extensive notice and cultivation, as it is one of the most beautiful and free-blooming of this interesting genus. The flowers are slightly fragrant; but this quality is more than outweighed by the strong fetid odour of the leaves, which, on being disturbed even by a current of air passing among them, emit more or less of this unpleasant smell. It succeeds well cultivated in the greenhouse in a compost of good free loam, with about one third part of peat or leaf mould and sand, well drained. Much attention should be devoted to the stopping, because the plant is naturally disposed to become "leggy" if this is not attended to.

DELPHINIUM CARDINALE (Scarlet Larkspur). Nat. ord., *Ranunculaceæ*.—A native of California, and introduced into Britain by Mr. Lobb. Stem about eighteen inches high, glabrous. Leaves in outline cordate, chiefly radical, on long round petioles, divided almost to the base into five wedge-shaped segments, which are again divided near the margin; veins strongly developed. Sepals five, broad, obtuse, scarlet; spur tapering, also scarlet. Petals yellowish, shorter than the sepals. Inflorescence an elongated panicle, terminal, furnished with opposite pairs of awl-shaped bracts.

This plant is said to be very beautiful in its native country; but, as I have seen it in this place, it certainly fails to bear out the eulogiums that have been passed upon it by those who have already brought it before the public. July seems to be its blooming season; but long before this time it has become destitute of foliage; or, if it still possesses it, it is in such a state of decay as to render the plant still more unsightly. The colour of the flowers is decided scarlet—the worst of all bright colours to look upon without a genial relief, such as green. But the circumstances under which the plants were placed in some degree, or perhaps wholly, account for the absence of foliage at this important period. The soil was light, hot, and dry, and the situation much exposed to the direct rays of the sun. During the earlier stages of its growth the plant showed every symptom of the want of necessary shade and moisture. It would be well, therefore, to try it in some shady situation, where it would enjoy coolness and moisture in the degree it requires for its perfect development. The colour of the flowers proclaims it a novelty in a

genus possessing so little variety of tint as Delphinium; and were it better adapted to places generally it would become an early favourite in our gardens. It requires the same treatment as is usually given to hardy annuals.

JAMBOSA MALACCENSIS (Malacca Jambosa). Nat. ord., *Myrtaceæ*.—This truly splendid stove tree is a native of the East Indies, and forms a striking feature of interest in the flora of the district to which it belongs. It produces a pulpy fruit of wholesome and agreeable qualities, which is much esteemed by the natives. Stem from fourteen to eighteen feet high, much branched. Leaves on short petioles, opposite, broadly lanceolate, smooth, dark green; margins quite entire; marginal vein very prominent. Calyx consisting of five very obtuse, ovate, persistent sepals; dark rose colour. Stamens very numerous; bright purple. Inflorescence a panicle of four or five flowers, produced in the greatest profusion all over the branches.

This, although an old species, is not so generally cultivated as it deserves, the chief drawbacks being its great size and the peculiarity it possesses of not flowering till it arrives at considerable age. Its splendid beauty, it is true, cannot be enjoyed where the convenience of a lofty stove is not possessed; but in every practicable place it ought to find a position in the collection. It delights in a moist, warm atmosphere, a rich soil well drained, and plenty of sunshine. Stopping can be resorted to as a means of keeping it dwarf; but when this is done a profusion of bloom need not be expected, because that depends more on the old wood than on the young.

STREPTOCARPUS POLYANTHUS (Many-flowered Streptocarpus). Nat. ord., *Cyrtandraceæ*.—This beautiful little stove plant was introduced into this country by Captain Garden from Natal. Stemless. Leaves in pairs of unequal size, cordate, roughly and very much wrinkled; margins crenate and slightly undulated; veins prominent on the under side, hairy on both sides, bright green, lying close to and clasping the soil. Scape arising from the root, bearing a loose panicle of flowers. Calyx a short tube, with five unequal teeth. Tube of corolla curved, long; limb divided into five wedge-shaped segments; light blue.

The culture of this pretty plant is very simple. It ought to be grown in a shallow pot well drained. The compost should consist of two parts good fibry loam, with one part leaf mould and sand. A nice shady, moist position in the stove is the best it can occupy. It blooms in early spring or in autumn, and often, in the latter case, lasts till the winter is far advanced.—S. G. W.

HAMPTON COURT GARDENS.

THERE is an improvement in the Hampton Court gardens this season which, I should think, could not fail of being seen by the "common people" of London

after passing into the open air from the colonnades and corridors of the Palace, the "right of way" into the gardens. When I first called there three years since, and opened my eyes on the front of the Palace, I thought I should never shut them again on such another shabby concern. The stamp of a master mind was obvious enough, radiating away in all directions from the centre of the garden front, in the original laying out and planting of the grounds in the true Dutch style; but the carelessness, or ignorance, or indifference of the present generation *there* was much more obvious up to the front door, where half a dozen of the small ends of great radiating lines planted with Yew met between three broad gravel walks. The Yews were all planted at one regular distance of thirty-two feet one from the other, and about half that distance across under the Yews was one mass of rubbishing, scrubby, half-starved bushes, with patches here and there of more miserable "herbaceous plants" if you please, just sufficient to claim the name of "shrubberies." The suckers and side branches of the Yews mixing with these made a beautiful "cover" for rabbits, rats, and vermin; but somehow or other one could not see along or across this part, the best part, of the grounds, where large numbers of flower-beds were well planted, but were entirely lost or drowned as far as effect goes; and thinking, or rather, knowing that something was better than nothing, I said in my hurry that if I were the first commissioner of public works I would order the Sappers and Miners down to Hampton Court to root out those Yews at once, or to clear the ground under them, and turf up to the old stems of the Yews, and trim them up to the browsing line, that the beauty of the garden might be seen in all directions, and that any one who had a turn that way might understand the design, which is a perfect model of its kind; at least, the most perfect of that class in England as far as I know. But, unless these Yews stood in the way of siege operations against an enemy of old England, there is not a gardener or garden patron in this country who could find it in his heart to pull one of them down in such a place. They made a beginning, however, of clearing under the Yews, and introducing flower-beds in the spaces between them, as in other parts of the garden; but as the work will require to be done very carefully, so as to show as little as possible of the effects of the former bad management at once, it will take some time before the garden can be put into proper order.

The great conservatory walls, which run right and left from the Palace front, have also been remodelled since this time last year, and are a vast improvement. The borders under these walls are now planted in the mixed style, but on a regular systematic plan—the rarest thing to be met with in English gardening of this class. Room will not allow of describing the details of planting to-day; but I shall give the whole some day or other, with many useful details, and will end to-day with what is more in season. All the kinds of bedding Geraniums are now being *propagated in the open air only*, while hundreds of lights of cold houses and cold pits are lying idle—48-pots for the stronger kinds, and four cuttings in each pot; but such cuttings! They are from eight to eighteen inches long, and the strongest which can be gathered from the beds: often they are branchy, and a few of the leaves are taken off. Very good light soil is used, and four holes are first made with a blunt dibble, a little sharp sand is put into the holes, then the cuttings, a little more sand, and then a firm pressing. After all, the pots are placed on coal ashes full in the sun, and in long oblong squares, quite close together, like so many groups of soldiers at a review. You never saw a better sight even at a review. They hardly lose a cutting out of ten thousand. Nothing

more, except watering, is done to these cutting pots until the middle or end of February, when each plant is put into a separate pot, or is planted out in a bed under glass. By that time each plant is big enough to be put into the flower-bed at once, and much bigger than most people can buy in April.

They have another most economical plan for striking the rare and more delicate kinds of variegated Geraniums and late cuttings of all sorts—a slight hotbed in the open air. Every one knows by this time that THE COTTAGE GARDENER prefers all kinds of Geranium cuttings to be struck in the open air, and that that was the "old plan" at and before Miller's time, as he tells us in his Dictionary; but now we have many delicate kinds, which do better with a little more bottom-heat than our British soil can give. To meet such cases the gardeners at Hampton Court hit on an excellent expedient, which may be followed by any one who has a garden. Instead of making muck pies of all the refuse and sweepings of the garden they collect the whole into one place, shake it up, and make it into the form of a dung Cucumber bed, only ten times longer, and two or three times broader, and when it gets to feel sensibly warm to the hand on the surface they cover it with short grass two or three inches to keep down the smell; the sun dries up the top of the grass in a short time, and then the bed is fit for the cutting pots. I saw hundreds of cutting pots thus managed doing as well as any cuttings I ever saw. Slight hotbeds in the open air have often been talked about, though they are seldom to be seen; but this is a good way to begin with them.

Dennis's *Alma* was again the most telling Geranium in these gardens; but I can tell, from my own experiments, that a large bed is necessary to bring it out fully. It is most difficult to get proper cuttings of it in the autumn, as every inch it grows produces a flower-bud. It would appear to seed like a weed, but there is not a seed in fifty pods, and out of fifty good-looking seeds not more than fifteen will vegetate unless the pollen was applied at the right time. There is a collection of the best Hollyhocks from the florists in the mixed borders in front of the walls, and two large beds of the seedlings of last year which were raised in the place. The curator, Mr. Donald, being, or having been, a fancier of that tribe for many years, his own seedlings, or some of them, are much better in style and shape than any of the bought ones. He showed me how to get a first-rate seedling from a third-rate plant or kind, and also how none but inferior sorts could be had from the best kind in existence.

There is hardly a family of plants from which popular crosses are obtained but some one has a secret way of operating on it, and this is the secret in the Hollyhock family. These secrets are perfectly lawful and most useful in the long run; but the secret of "cooking" flowers after they come into the world, so as to make them look so much better than is natural to them, is downright cheating for the purpose of getting money under false pretences. The Hollyhock is watched from the opening of the first flower. Every flower which is not perfect of its kind is picked off as soon as it is full blown. The best kinds often come false, and common kinds show a first-rate flower occasionally, as if by chance. No matter, therefore, whether it is the best, or second or third best, or no best at all, which shows the coveted flower: that flower is marked, and every other flower on that spike is instantly destroyed, and the whole strength of the plant is reserved to seed one flower, or two at most if the plant is very strong. Gathering seeds from the best kinds indiscriminately is, therefore, like love's labour lost. If a first-rate seedling is taken up with the Dahlias and potted, kept in a cold frame, and gently forced in February for

cuttings like Dahlias, they do better for private use than by any other method.

Mr. Donald gives me the following estimate of *Verbenas* as the result of a trial of sixty-four kinds this season in Hampton Court gardens:—

"*Mrs. Holford*.—White. This is perhaps the best of its class both for growth and flower.

Mrs. Hosier Williams.—Another good white. This has not done so well with us as the above.

White Perfection.—Old, but still may be considered a good bedder.

Conqueror of Europe.—Lilac. Individually this is not much, but in a mass we have few or none of that colour to equal it.

Purple King.—A very great improvement on *Emma*, being much more compact, and forming a better bed.

André.—Blue, growing very strongly, and therefore well adapted to poor soil. Trusses very large.

Lord Raglan.—Crimson; the best of its class in every respect.

Blue Bonnet.—Light blue; very good. This is apt to become yellow in the leaves in dry weather. *Purple King* is sometimes to be found under this name.

Eliza Cook.—Bright rose. This is very old, but I know of no *Verbena* that will stand the sun like this. Where *Wonderful*, *Annie Laurie*, *Nosegay*, *Florence Nightingale*, *Beauté de la Française*, and a host of others which might be enumerated would be burnt up, *Eliza Cook* will be in perfection.

Géant des Batailles.—Rich dark scarlet. This is very good, and may form a bed in the flower garden for some years.

Mederic.—I think this will prove to be an improvement on *King of Scarlets*, being a better grower.

Standard Bearer.—Comparatively new. My plants are not in a very good state to judge by; still I am inclined to think this will prove to be a good variety, especially if it stands the sun, which, being blue with a large white eye, is rather doubtful in one sense.

Jean.—Almost white, with a pink eye; flowers rather small, but in great profusion, which renders it a very cheerful bed.

Defiance.—This is very old. *Mrs. Woodroffe* is no improvement on it, nor do I think we have one in that class equal to it; yet it may be compared to *Tom Thumb* Geranium. It grows well on any soil, and everybody knows it.

Commander in Chief.—This is a very great improvement on *Beauty Supreme* in every respect.

Matchless.—Self blue. This with me will take the place of *Ariosto* next year." D. BEATON.

SHORT CULTURAL NOTES FOR WINDOW GARDENERS.

(Continued from page 294.)

GENISTA CANARIENSIS.—Treat, as respects soil, &c., as *Coronilla* or *Cytisus*.

GESNERA ZEBRINA.—This beautiful plant does well in a window from September to the end of October, protected from the sun's rays by a muslin curtain, and with but little air given; but it requires a close, warm, moist place to bring the plants on after the tubers have started, until they approach the flowering period. Without a frame or pit of some sort it would be vain trying to grow it, though it would bloom well in a window, and the roots may be kept securely in a kitchen cupboard. Seeing it often in windows induces me to notice it.

GLADIOLUS.—Many of these make fine window ornaments if kept cool and dry when in a state of rest, supplied with fibry loam and heath soil, and a sufficiency of water and air when they begin to grow, and brought to the window as they show signs of flowering.

GORTERIA (GAZANIA) RIGENS.—A small evergreen herbaceous plant, with orange flowers, having a beautiful dark purple centre. When the sun shines in summer few things are more beautiful. Keep the plant from frost and rather dry in winter, and increase the water as it grows in spring. It should be well drained, and then fibry loam will grow it well.

HAWORTHIA.—Small succulents, to be treated as *Cactus*, *Mesembryanthemum*, &c.

HIBBERTIA GROSSULARIEFOLIA.—One of the prettiest hangers for a window we have. Fibry sandy loam and a little leaf mould or heath soil grow it well. It looks best when the pot and its saucer are encased in a little basket stuffed round with moss. It requires a pretty strong frost to injure it if kept rather dry in winter.

HYACINTH.—(See BULBS FOR WINTER AND SPRING BLOOMING.) Pot one bulb in a four-inch pot as soon as you receive it, using light rich soil. Cover the pots several inches with ashes out of doors, or set them in a cool dark place, and do not bring them to the light until the pots are full of roots and the flower-stems showing. Shade a little at first, and water as necessary, a little manure water being advantageous after the flower-stem begins to grow freely. Keep watering, and give the plant all the light you can while the leaves are green. When they get withered refrain from watering, and keep the bulbs dry, either in the pot or out of it, until starting again the following season. Even with this care they will seldom do so well a second year as imported bulbs. For glasses act in a similar manner, only change the water often, and put some pieces of charcoal in the water. See previous notes.

HYDRANGEA HORTENSIS.—Plants raised from nice shrubby cuttings are best for windows. Here is a plant with a single stout stem that has borne a fine head of bloom. When done flowering prune it away, with some inches of the top of the stem, and if the buds at the axils of the leaves left are very thick, thin them out a little so as to leave from four to six well-placed ones for producing shoots next year. Water as long as the leaves are green. Curtail water as they get yellowish, and when fallen give no more than will just keep the buds plump. Give all the sunlight possible either indoors or out. Protect from frost and wet in winter. In spring, as the buds push, shift the plant into rich loamy soil; place in the sun, and give abundance of water as the plant grows and shows bloom freely. When done flowering repeat the pruning and ripening process; but the second year is generally old enough for window plants. To get blue flowers use filings of iron or a weak solution of alum in the soil; but even then you will not be so sure of the object as if you had such soil as naturally produces that colour in this plant, such as that from Wimbledon and some bogs near Edinburgh.

IXIA, *SPARAXIS*, *TRITONIA*, and *BABIANA* require similar treatment, and all are pretty little bulbous plants that would flourish well in an airy window in the spring of the year. When done flowering water as long as the leaves are green. When they begin to show signs of fading curtail watering, and refrain altogether when they die down. Place the pots in a sunny, sheltered-from-rain spot. Towards the end of autumn they will show signs of pushing, when they should be watered and top dressed, or repotted in sandy peat, with a very little sandy loam. From that time they must have abundance of air, be kept near the glass of a window, pit, or frame, just be protected from frost, and have water according to their growth and the weather. They will generally want most at flowering time, about April.

JASMINUM GRACILE AND *NUDIFLORUM*.—The first will not stand much, if any frost. The flowers, though dirty white and small, are very fragrant, and are produced plentifully during the summer on plants not more than a foot or eighteen inches high. It thrives in peat and loam, should be kept dryish in winter, have a fair amount of water when growing and flowering in spring and summer, and when done flowering should have a sunny spot out of doors to ripen its buds, the young shoots from which bloom the following year. *Nudiflorum* is evergreen and hardy, and produces an abundance of yellow flowers in winter on shoots grown and ripened the previous summer and autumn. It adds to the brightness of a window, and, except when in bloom, may be kept with its roots protected out of doors.

KALOSANTHES.—See CRASSULA.

LACHENALIA.—Many kinds, as *tricolor*, are pretty early-blooming bulbs. They are rather more tender, but otherwise require similar treatment to *Ixias*. If the bulbs are kept moist or watered when in a state of rest they will bloom very poorly.

LANTANA MUTABILIS and CROCEA SUPERBA are best for windows. They bloom freely when in a young state from one foot high and upwards: small side-shoots will strike freely under a glass in May. Towards autumn give little water, and harden the shoots in the sun. The plants in winter may then be kept like *Fuchsias*, only they must not be too damp, nor often nor long below 40°. They will not bud if about 45°, though at that heat they will be safer.

LILIUMS of all kinds treat as recommended for other bulbs, keeping them dryish when in a state of rest.

LILY OF THE VALLEY (*Convallaria majalis*).—Unless there is some means of forcing this a little pots placed in a window will not greatly precede those out of doors. When forced forward it will stand a long time in bloom in a window. In potting for this purpose select plump, prominent, firm buds, with all their roots attached, and squeeze from ten to twenty of them into a six-inch pot, packed in rich sandy soil. A close box, with a little bottom heat, would bring them on nicely for the window. I have known pots forwarded a month or six weeks before those out of doors by the pots being set near the fireplace at night, placed in the sun during the day, and watered with water from 70° to 75°.

LINUM TRIGYNUM can hardly be recommended, though beautiful when in bloom in summer, as it is so subject to the red spider that it would require to be removed as soon as the flowering was over. Fibry loam suits it, and a dry position in winter secure from frost.

LOBELIA SPECIOSA NOVA makes a fine neat mass of blue in summer—inside in an airy place, or outside full in the sun. The old *speciosa* and *bellidifolia* are the finest blues for trailing downwards from a vase or basket. All are easily raised from seed and cuttings in spring. Seedlings from the new *speciosa* are more robust than their parent, but not so trailing as the old one.

LOPHOSPERMUM SPECTABILE and HENDERSONII would make good neighbours to *Hibbertia* as suspenders, and are also valuable for baskets and verandahs either as creepers or trailers. Raised freely from cuttings, and also from seeds in spring. Plants raised from cuttings in the previous autumn will bloom more freely. I do not mention the strong-growing ones for this purpose; but *erubescens* and *scandens* would be useful for verandahs that you wished to cover quickly and thickly in summer. Any fresh fibry loam will suit them. Very little frost destroys them.

MAURANDYAS—purple, pink, and white—will all be useful for similar purposes as the above, and require very similar culture. They are more desirable, because more hardy. I saw, last summer, a plant of *Barclayana* grown in a pot packed in a basket suspended at the top of a window, with long shoots hanging down from it loaded with bloom.

MESEMBRYANTHEMUMS.—For a list suitable see No. 441 of THE COTTAGE GARDENER, p. 402. The trailers and more compact succulents of this family are peculiarly suited to amateurs who can give no regular attention, as they pretty well take care of themselves. Easily propagated by cuttings allowed to dry at their base before inserting them in rough sandy soil. Soil, sandy loam, with a mixture of brick rubbish and charcoal. Temperature seldom below 35° or 40° in winter, and as high as the sun will make it in summer and autumn. Water when growing and flowering in spring and summer, but even then moderately. In autumn and winter give no more than will just keep the leaves from shrivelling, and that will be little indeed. If the room is not dried with fire heat in winter the plants will want no water at all.

MIGNONETTE (*Reseda odorata*).—For winter and spring blooming drain the pots well, and sow in fresh soil, having little manurial matter of any kind in it. Sow at the end of July and the middle of August, and again at the beginning of March, in the latter case placing the pots in the window. Thin as soon as handleable. For Tree Mignonette sow in small pots in April; thin to one plant when growing nicely; shift and reshift into larger pots as necessary until

August. Meanwhile, tie the main stem to a neat stick, encouraging it to mount to the desired height, whether eighteen or thirty-six inches, stopping all the lateral shoots at the first or second joint from the stem, not removing them, and nipping off every flower-bud until the plant has got a good head, so as to bloom all over. Be careful in watering, so that the soil shall neither be dry nor sodden, and give as much air as the weather will permit through the winter.

MIMULUS.—Get a pinch of seed of what are called the florist varieties, now as common as herbaceous *Calceolarias*; sow in April under a square of glass; prick out the seedlings as soon as you can catch them; and, when some size, either grow on in pots in the window, or plant them out on the balcony or the flower borders. It is not particular as to soil; but everywhere, whilst growing and blooming, it delights in plenty of water, but not in a stagnant state. You may take cuttings from the varieties that please you best, or purchase small plants of approved kinds. The same rule as to watering applies to all. The tribe likes plenty of fresh air, and if bordering upon frost will take no harm if the roots are not chilled by exposure. If kept in a moistish, cool place in winter it will require but comparatively little water then.

MUSK (*Mimulus moschatus*).—This, like the above, is propagated by seed and cuttings, but chiefly by a division of the root when vegetation is commencing. When growing and blooming it drinks greedily. When the leaves and stems begin to fade lessen the quantity of water. When they are wholly decayed give none at all if you can place the pot in a cool, damp place, such as a cellar. As spring returns, or long before then if the plant has been used to rest early, the roots will begin to push their shoots; then give it a little water and bring it to the light; and now is the time, if disposed, by division to make your plant into several, or even a dozen, and very likely each of these will flourish better than if you had left all the roots in the one original pot.

MYOSOTIS PALUSTRIS.—The true *Forget-me-not*. There will be little difficulty in getting the plant either by seeds or roots. When growing supply it with abundance of water in an airy window somewhat shaded. As autumn comes plunge your pot somewhere out of doors, and place a branch over it in winter, as your codling may have made it tender, and in the spring you may make several pots out of it by division, and thus scatter among your friends so many keepsakes to hold you in remembrance.

MYRTUS COMMUNIS.—In our boyish days fair cousins, kind aunts, and doting grandmothers all had their Myrtles in their windows, and it was no uncommon thing to find three or four nice young plants growing round the old one, ready to be taken up as a friend required one. We see it more rarely now, and whether in its small-leaved or broad-leaved varieties it is a pleasant object in winter even when green, and in summer when in bloom. Sandy loam will grow it well. It will be all the better for a little heath soil or leaf mould. It will be comfortable in winter if the temperature is not long below 35°. In summer it will stand well out of doors from May to the end of October with its pot and roots protected from the sun. At no time must the shoots be dry. A close, hot room in winter will draw the shoots and make them weak.

NARCISSUS.—For pots treat as for *Hyacinths*, only a good bulb will require a six-inch pot. See what was said under BULBS.

NERINE SARNIENSIS (*Guernsey Lily*).—Pot in light sandy loam when received, and they will bloom in the autumn with common attention. When the leaves come keep green as long as possible if you expect them to do good afterwards.

NERIUM OLEANDER SPLENDENS.—Easily propagated by cuttings under a bellglass in May or June, or in a phial of water if taken off with a heel of the older wood. Stiffish loam with a little peat suits it best. Whether a plant blooms every year or every second year the bloom can only be produced this spring and summer at the ends of shoots that were grown and matured last season. We must prune and treat our plants according as we wish some of the shoots to bloom this year and some the next year, or all one year and none the next. Here in June is a plant with two shoots: one shows signs of blooming, the other not. I cut the flowerless shoot down to near its base, that thence I may get two or

three shoots for next year. The free watering encourages the flower-shoots, and also these young ones. When done flowering I cut down that shoot also, so as to give me a further succession. Meanwhile I encourage the others to grow as much as possible by watering, &c., until towards the end of September, when I give little water, but as much sun as possible. In October I give no more than just keeps the plants from shrivelling when standing against a fence, and having all the sunlight possible. When housed for the winter keep them next to dry, and just anywhere safe from frost. As the sun gains power in March and April they will begin to grow, and must be watered, and before long will show their flower-trusses.

R. FISH.

TREES, SHRUBS, AND FLOWERS THAT WILL GROW IN OR NEAR LARGE TOWNS.

It has fallen to my lot lately to have to lay out gardens and shrubberies near such smoky towns as Sheffield, Manchester, &c. The constant inquiry is, What will grow in our garden? Now, this inquiry I have had to answer often for a considerable period of time, having had shrubberies and gardens to plant in and near such towns for upwards of thirty years. I have thus had my attention directed more especially to this subject, and have, in consequence, noted certain trees, shrubs, and plants that will grow, or at least exist, in spite of the dust and smoke amongst which they are required to live, and breathe, and have their being. There is in this busy manufacturing empire a great number of such assemblages of the abodes of our industrious artisans; and though the smoke laws are sufficiently stringent, yet it appears to me the atmosphere near such manufacturing towns is not any purer or healthier for trees and shrubs than it was in my younger days. I see new villas erected and shrubberies formed near such towns, and all sorts of things planted, without any regard as to the probable success in such planting. Now, I think it is little short of murder, or at least plant slaughter, to put in delicate shrubs in such a climate, or rather, atmosphere, laden with pore-choking particles of soot and dust. The perpetrators of such crimes ought to be brought to trial by common sense, and drummed out of the army of planters. As I stated above, having been compelled, in the course of my business, to note those things that will live in such places, and as many readers of THE COTTAGE GARDENER are, unfortunately for their gardens, so situated, I purpose to lay before them the result of my experience, trusting it will be found useful in directing town gardeners both what to plant and what to avoid planting.

In order to succeed with cultivating any kind of plants in gardens near large towns it is absolutely necessary to have good soil, and the site well drained. By good soil I mean fresh maiden earth, such as would be formed with the top spit from grass land. This fresh soil does not need any manure. It is a great mistake that amateurs often fall into, that to make soil good plenty of rich dung is all that is needed. If the soil in town gardens has become exhausted the best reviver would be a liberal application of quick-lime, well mixed amongst it with a five-pronged steel fork. This mixture of lime would rectify the dead qualities of the inert mass, and cause many plants to grow that would otherwise stunt, and eventually die. Where lime cannot be had, and the expense of entirely replacing the old exhausted soil is objected to, then add as much fresh loam as possibly can be got, mixing it well and thoroughly with the old soil; it is then ready for planting.

The best season for this operation is the month of October or November. By planting thus early the trees

and shrubs would have time to make fresh roots before winter sets in. After the planting is finished every tree or shrub should be staked, and well tied to the stakes. The reason for this precaution is, that wherever there are walls there are strong currents of wind whirling in all directions, which shake the plants terribly, and, by twisting the tops about, injure the rooting process greatly. When all are planted and secured to the stakes a mulching of moss or litter will be of great service in protecting the roots from frost, thus encouraging their growth and lengthening the season for that procedure. By taking this care to procure good soil, planting early in the season, staking, tying, and mulching, the amateur may reasonably expect at least some success. Generally villa gardens or town gardens are planted by the builders of the houses, or, if they do not plant them themselves, they let the job to a jobbing gardener at the lowest possible rate. The trees and shrubs are selected without any regard to the probability of their growing. A few inches of soil are laid on the surface, and the trees thrust in and left to their fate. How is it possible they should thrive when their roots are in rubbish, and their leaves exposed to such dense clouds of smoke and dust? Let the garden owner in such cases take up the plants and form the borders with good soil at once. Too many say, "Oh! let them alone; let them take their chance; nothing will grow here." I say in reply, *nil desperandum*.

In gardens so unhappily situated the trees, shrubs, and flowers may be kept in tolerable health by frequent and severe syringing, or, in other words, by washing the leaves clean whenever they are covered with dust. I recollect reading in some book about a gentleman who had a pet Laurel in the very heart of London. Earnestly desirous to keep his favourite shrub in health, he sponged the leaves quite bright and clean every morning, and sprinkled them over with a rose pot every evening. With such attentive treatment and care, continued in all dry weather not actually frosty, the Laurel grew and thrived apace, rewarding him for the trouble, and rendered thereby more endeared to his heart. I do not, however, expect that any of my readers will bestow so much pains on a Laurel; but the result shows that cleanliness, especially in or near towns, is as necessary for the health of plants as animals. Long-continued rains will dissolve and wash off that thick scum of dirt which near towns accumulates on the leaves of plants, especially evergreens. The syringe well applied prevents that accumulation; therefore let me press upon cultivators the frequent use of that useful implement.

The list of trees, shrubs, and plants in our next.

T. APPLEBY.

(To be continued.)

GARDENING ON A HEAVY SOIL.

THERE are few things more unpromising than a piece of stiff, loamy ground when just turned up roughly previous to the setting in of dry, hot weather; and, if certain crops ought to be sown or planted on such ground, it seems almost hopeless to accomplish the task on such an obstinate soil; yet perhaps it may be done with less trouble and better success than might be expected by following a few simple rules.

When plants of the Cabbage or Broccoli tribe of a fair size are ready to plant out in ground of the kind alluded to it is best to go over the ground with a sort of beater, the same as is used in beating turf. This, of course, takes some time; but if there should not be time to do it all over in that way, then set the line in the direction of the row, and with a narrow beater go down the row, and break it well by repeated blows, after which put in the plants, and then water them. I often think plants of the kind alluded to do better when planted in summer

in this way than when done in moist weather; for the ground being dry gets no harm from the treading it receives, and there being some fine, dusty earth at top to run in the dibber hole, the plant is put more firmly in its place than it often is in damp weather. A little watering at the time of planting is absolutely necessary, but need seldom be repeated, and the other rows being all treated the same, the work is not so laborious as might be expected, and it is always preferable to plant when ready than wait for showery weather on such stiff ground; for it is not unlikely that slugs and other enemies may abound in such numbers as to be very destructive to newly-planted Cauliflowers, Broccoli, Savoys, and other tender things, and I have often preferred planting in dry weather to doing so when wet on that account.

The sowing of seeds on such a soil is attended with a little more trouble, and it is needless to say that on an extensive scale it could not well be done; but for small beds of seedlings, as Lettuce, Endive, Cauliflower, and the like, something must be done. The ground must be well beaten as above until the surface clods are reduced into a sort of dust, when the seed may be sown, and the ground well watered, reserving some dry dust to throw over the beds when they have become a little dried at top, not caked hard; for, be it observed, the covering of the beds with dry dust is to prevent that hardening at top which invariably occurs after watering in dry, hot weather, and if a little shading of any kind can be had so much the better, as a covering or partial covering with boughs, or anything that will prevent the direct rays of the sun acting on the ground, will prevent its getting so hard and "cake-burnt" at top as it generally does when often watered in dry weather. But a better remedy is to cover the beds with leafy mould if it can be had; its lightness prevents its caking hard, and it is useful in other ways as well. But the suburban amateur will be more easily supplied with road dust, and if that has a quantity of horse droppings ground into it, and is used rather liberally, it will be of great service.

A dry sand or hungry gravel is a much worse soil to manage, though more agreeable to work; but the result is seldom so satisfactory unless in wet seasons or wet neighbourhoods. In very dry seasons the difficulty is more in maintaining a healthy growth than in obtaining the germination of the seed or the start of the plants, as in stiff soils; for in the latter the growth is almost certain if it can only be once set agoing, whereas in dry, hungry sands or gravels a half-starved growth is the result, Lettuces running to seed, Cabbages and everything else of that kind with leaves a sort of sickly blue, and, in fact, all vegetation suffering in like manner. Copious waterings are the only restoratives; but when really good vegetables are wanted some manure must also be used with the water at times, otherwise all the enriching matter in the ground will be washed out, and the plant, though not suffering from drought, will be nevertheless destitute of that useful kind of food which produces a good result.

In dry, hot weather some good will result from covering all the intervening ground with some non-conducting material. Short lawn grass is very well in its way. Tree leaves more or less decayed are also good, and tan is occasionally used for this purpose; but never use this fresh from the tan-yard without first ascertaining, by some trial on a piece of waste grass or other place, if it be wholesome, for some of the tan of late has been saturated with a liquid so hurtful to vegetation that I have cautioned the inexperienced against using it until proved to be innoxious. I suppose it is the different process of tanning which has altered the character of the bark. Some of it cannot even be induced to heat without so much trouble, that I would not advise it as a substance to retain the moisture in the ground if short

grass, leaves, or any other farmyard rubbish can be had instead; for, be it observed, that appearance in this instance must give place to utility. The wants of a future time and the quality of those articles ought to be considered in preference to all other things.

J. ROBSON.

VARIOUS LIQUID MANURES.

(Continued from page 242.)

2. SULPHATE OF AMMONIA.—One pound made soluble in water sufficient to cover it, and afterwards diluted with thirty-two gallons of rain water, in which two quarts of soot and one quart of singe dust (*i.e.*, the matter that falls from worsted fabrics when passing quickly over an iron plate heated red hot previously to being dyed)* have been steeping for a few days, make a very stimulating liquid, which is particularly adapted for cold, heavy soils. It ought not to be applied during the day if the sky be clear, as it is liable to scorch the leaves of the plants.

Its effects on the root crops to which I have given it have been rapid and striking. Onions and Shallots never present that yellow appearance to which they are too frequently subject during the latter part of May and June. The tops are always full of sap and of a lively green colour, and the bulb and stem enlarge rapidly until within two or three weeks of the time they are ready for being taken up, at which time the green parts cease to elaborate the juices necessary to carry on a vigorous growth, dry down, and leave the bulb in a proper state for being kept throughout the winter. These remarks apply with equal force to the Leek, with this exception, *viz.*, that it continues to enlarge through the whole of the growing season, and remains particularly crisp and tender even when inactive and stored for the use of the table in winter. German Stocks and Asters, *Ageratum grandiflorum*, *Lobelia hirsuta*, &c., *Nierembergia filicaulis*, *Pentstemon gentianoides*, *Salvia fulgens*, &c., when bedded out appreciate the use of it, and more than repay for the extra trouble required in applying it; but in using it the nozzle of the tube attached to the watering-pot should be carefully introduced between the plants, so that the liquid in passing out of the pot does not fall upon the foliage before it reaches the surface of the bed.

3. CALCINED BONES, or bones dissolved in three times their weight of sulphuric acid, and mixed with one-fourth their weight of lime, pounded charcoal, and soot in equal quantities, form a compound, when diluted with water in the proportion of eight gallons to one gill of the mixture, that can scarcely be too highly valued as a manure for general purposes; but, like No. 2, it ought not to be allowed to fall upon the leaves, especially of plants under pot culture. Its influence on the foliage of plants growing in the open air, and whose roots are not circumscribed by pots, &c., varies. For instance, the tops of Salsify, Onions, and the like do not suffer through its effects, so far as my experience goes; while the leaves of Parsley, Endive, Potatoes, Lettuces, &c., appear in the course of twenty-four hours after its application as though they had been burnt with fire, although, when it is applied to the roots without coming in contact with the foliage, the plants luxuriate amazingly.

Apple and Pear trees enjoy the free use of it. The bark which covers the stem and boughs of the tree to which it has been given always looks healthy and free, thus indicating that those minute vessels whose office it is to secrete and circulate the sap required to bring the tree to perfection are in a proper state to perform the various offices that nature has designed for them. The ultimate result is the perfect development of the parts of fructification and an abundant crop of well-flavoured fruit.

When given to the Currant and Gooseberry bush its effects in a short time become pleasingly evident, especially when they are pruned according to the excellent rules which have been laid before the readers of THE COTTAGE GARDENER by Messrs. Errington and Appleby, at pages 72 and 91, Vol. XVII., and which have obtained since their publication the title of a new system, but which, by the by, is older than my

* Three quarts of soot, without the singe dust, which can only be had in the woollen manufacturing districts, would do as well.—ED. C. G.

grandfather would have been if he were now living, and he was close upon eighty-two years old when he died, and who, during his practice, was tenaciously fond of the system, which he then called the old Scotch style.

There is no tree during its pruning and training that receives a more criminal treatment than the Gooseberry, and therefore great praise is due to Messrs. Errington and Appleby for directing the attention of the young practitioner to the only mode that a judicious, well-disciplined judgment can approve. When they are pruned in agreement with the system to which I have referred, the nutriment taken up by the roots is not expended in the production of an unnecessary quantity of spurious wood. Necessarily, therefore, the occasional steeping of the ground with the above liquid will not only improve the size and flavour of the fruit, but will also assist nature in the formation and perfection of the buds from which the next year's crop of fruit is to be expected.

4. GUANO, BLOOD, AND THOROUGHLY PULVERISED CHARCOAL, one pound each. The blood may be obtained from the slaughter-house, and should be placed in a tub and kept air-tight from four to six months previously to being used. This, when placed in a vessel containing from thirty to forty gallons of water, and stirred occasionally, renders the whole mass ready for use in twenty-four hours, and when applied to *Pentas carnea*, *Echites natans*, *Vinca rosea, alba, ocellata*, *Clerodendrum fallax, squamatum, fragrans*, *Cyrtoceras reflexum*, *Asclepias Curassavica*, *Cyrtanthera magnifica*, *Rivina humilis*, and *Capsicums*, they give evident proofs of its adaptation to their constitution by the numerous large, well-expanded flowers and deep green-coloured and well-developed foliage they produce; and from what I have seen, and the little experience I have had of its use in the cultivation of the *Allamanda*, I am induced to place it among the first liquids used for the nourishment of this elegant tribe of plants. On the 24th of August of last year I saw two plants of each of the following species, namely, *neriifolia*, *grandiflora*, *cathartica*, and *Schottii*, to which I was informed this liquid was liberally given. I do not remember having seen any equal to them before either in size, colour, or quantity of both flower and foliage. Since then, however, on the 19th of July of the present year I have had the opportunity of beholding several of the above kinds in every point equal, and in one or two superior. Of what the liquid is composed that is occasionally applied to them I do not exactly know; but from the flavour of the soil in which the plants are potted, and which I obtained by placing a little in the mouth and allowing it to dissolve, I feel no hesitation in hazarding the opinion that the principal ingredient which enters into its composition is guano. This liquid may be applied during the growing season to every variety of plant, shrub, or tree cultivated in the kitchen garden, pleasure ground, and forest that is deciduous or that casts the whole of its leaves during the rest period.

5. PIGEON AND HEN DUNG, each separately or both combined, form the basis of a safe and useful manure. Twelve quarts put into a hogshead of water, and agitated now and then for a few days, and then adding to it four quarts of the liquid taken from the tank attached to the stables, into which the urine of the horses runs, and stirred well, and afterwards three quarts of quicklime being cast all over the surface of it, and left twelve hours, will have cleared, and will be ready for use. This liquid is a great favourite with the Vine, Peach, Nectarine, Apricot, Fig, and Strawberry, when cultivated either under glass or in the open border. The Pine, also, luxuriates in it when liberally supplied with it. In June, 1852, when on a visit to Liverpool, in my perambulations I called at several gentlemen's seats for the purpose of seeing plants I had not seen before, and also that I might see different and improved systems of cultivation; and at one of those places I was struck with the magnificent appearance of a quantity of Pines cultivated on the Hamiltonian system, to which the foreman told me the above liquid, with the exception of the lime, was liberally given to them early in the morning every second time they required water. The leaves of the plants were large, and bore the marks of high cultivation. The fruits were numerous, and in different stages of advancement, from the first appearance of the crown to perfect ripeness. The foot-stalks of the fruit were particularly strong, and well elevated the fruit.

6. HALF-DECOMPOSED COW OR SHEEP DUNG.—Either of these, when made into a liquid and cleared with a little quicklime, so as to appear about the strength of pale ale or beer made from light-dried malt, ought to be universally admired by florists and horticulturists; for it is not so stimulating as those mentioned previously, and therefore it is better adapted for the nourishment of those plants that are not so quick in growth and robust in habit. When I was under training for the order of the spade, my teacher, a member of the old school, applied it after the first year's cultivation to plants in pots cultivated for sale of *Cistus*, *Laurestinus*, Sweet Bay, *Aucuba*, *Kalmia*, *Andromeda*, *Phillyrea*, Dwarf Almond, Persian Lilac; also to choice varieties of Roses, herbaceous plants, and the stronger-growing kinds of Alpines cultivated in pots. It is useful for the *Cineraria* and *Primula*; and given once a week to *Acacia grandis, pubescens, affinis, dealbata, pendula, linifolia*, and also *Chironia decussata*, it renders them stronger in growth and more prolific in flower.

7. The same kind of compost as that in which the plants are potted for cultivation, and in which they grow freely, when diluted with water, and made to appear about the strength of No. 6, nourishes them amazingly. Liquid formed in this way I have applied with good effect to *Camellias*, *Pimeleas*, *Boronias*, *Azaleas*, *Rhododendrons*, and even *Ericas*. Care, however, ought to be taken not to use it too often; for those I have mentioned and the like once a week will be sufficient.

Now, I would observe, for the benefit of those who wish to become acquainted with the different kinds of compost, and the mixing of them for the cultivation of plants, that there is no work that can be consulted on the subject that is equal to THE COTTAGE GARDENER'S DICTIONARY; and to those who wish to have information on the analysis of soils and manures I would recommend the careful examination of "Chemistry of Agriculture and Physiology," by Liebig, and "Agricultural Chemistry," by Johnston; and to those who desire to obtain a knowledge of the anatomy and organography of plants "Smith's Introduction to Botany," and the "Elements of Botany," by F. Schoedler, Ph.D., translated from the German by Henry Medlock, F.C.S., as first works will be found useful.—B. B., near Halifax.

PLANTING TOGETHER ROSES AND PHLOXES.

In the spring of 1855 I planted a large bed of hybrid perpetual Roses two feet and a half apart. Being remarkably fond of Phloxes, the idea occurred to me of planting some amongst them, to keep up a succession of flowers all the summer. I therefore, last April, took out a spadeful of soil in each vacancy, and replaced it with good rich compost, decayed dung, and leaf mould. I then procured some good strong plants from pots, turned them out on the mounds, and gave them a good soaking of water. They have since received the same treatment as the Roses, viz., three good soakings of diluted night soil, which seems to be the favourite manure for these beautiful flowers, for they have grown amazingly, and are now, August 10th, most splendid, contrasting well with their companions, the beautiful Roses. They also flower in the interval between the first and second blooming of the Roses. The following are the kinds I planted, viz., *Countess of Home*, *Spencerii*, *Leonidas*, *Abdel Meschid Khan*, *Newmaniana*, *Van Houtte*, *Alcardii*, *Carolina*, *Brilliant*, *Kiewaskii*, *Muricata*, *Donkelarii*, *Undulata*, *Variegata* (beautiful variegated foliage), and several others. The above are not tall-growing kinds, and consequently are well adapted for grouping with perpetual Roses. Being hardy and easy of culture they will endure several years, but flower better when kept in a young state, which may be done by either being raised from cuttings, or dividing the old roots in the spring and planting them as directed before.—G. T. F., Leek.

[Your planting the Phloxes is good, but a still better place for them would be among *Rhododendrons*.]

CLEMATIS TUBULOSA.

RECEIVED from Dr. Fischer in 1846.

This is the most remarkable Clematis in our gardens. It forms a branching, upright, herbaceous plant, with stiff, angular, purple, downy stems, and great, smooth, shining, ternate leaves, of a pale bright green, the larger leaflets of which are three inches long and two inches and a half broad, bordered by coarse mucronate serratures. The flowers appear in sessile corymbs in the axils of the leaves, on stalks about one inch and a half long; they are about an inch long when full blown, of an intense blue, and extremely handsome.

So different is this plant in appearance from a Clematis, that the Russian botanist who first described it was in doubt whether it belonged to the genus; it does not, however, differ generically, nor do the flowers appear to be unisexual, as he describes them. It was originally found in the north of China by Porphyrius Kirilow, by whom its seeds must have been communicated to the Botanical Garden of St. Petersburg.

This fine plant succeeds freely in any good garden soil, but cannot be considered anything more than herbaceous, for it retains little of the previous year's growth. It suffered much from cold during last winter, and probably will not be more than half hardy. It is easily increased by cuttings of the young wood, and is a fine, showy, herbaceous plant, flowering in August and September. — (*Horticultural Society's Journal*.)

ENTOMOLOGICAL SOCIETY'S MEETING.

As usual at this period of the year, the attendance at the August Meeting of the ENTOMOLOGICAL SOCIETY on the 3rd instant was not so numerous as ordinarily. The chair was taken by H. T. Stainton, Esq., Vice-President, in the absence of the President.

Mr. Foxcroft sent for exhibition several rare and interesting insects recently captured in Scotland, with notes on the economy of some of them, and illustrations of their habits, amongst which were the transformations of the rare Dipterous genus, *Xylophagus*—interesting from the structure of its antennæ, as forming the connecting link between the multi-articulate antennæ of the Tipulæ and their allies, and the three-articulate, aristate antennæ of the Muscidæ, &c. He also sent the nest of the pupæ of the rare Beetle, *Rhagium indagator*.

Mr. Waring exhibited a number of rare Lepidoptera recently taken on the south coast near Deal by Mr. Bouchard, including *Trochilium chrysidiforme*, *Pione palealis*, *P. margaritalis*, *Melia bipunctata*, and also *Hemithea smaragdaria*, taken near Southend.

Mr. Waterhouse read a memoir on the British species of the family of Rove Beetles (*Aleocharidæ*). He had carefully examined the Kirbian and Stephensian types, and had collated them with a collection of seventy species recently forwarded to Dr. Kraatz, the German monographer of the family. By this means he hoped to arrive at uniformity in their nomenclature.

Mr. Pascoe read a paper containing descriptions of new species of Longicorn Beetles lately sent from Macassar and Celebes by Mr. Wallace. All these species, with one excep-

tion, were of Indian forms, which was an interesting feature in entomological geography, the sole exception belonging to a form peculiar to the eastern islands.

Mr. Stainton mentioned a curious circumstance in the economy of the Hive Bee, a piece of comb having been found affixed to the branch of a tree at some distance from the ground, having a little honey in some of the cells, although unprotected by any outer covering; and a smaller piece of similar comb was found on the ground beneath the tree. Mr. Westwood said that it was evident that these pieces of comb had been constructed by a swarm of bees which had settled on the branch in very hot weather, when the deposition of wax goes on very rapidly, comb often being formed by bees when clustered outside a hive.

Mr. Curtis has figured some pieces of honey-comb in his "British Entomology" which had also been found attached to the branches of a tree, and which were considered by that writer as a unique instance of such a habit.

Mr. Westwood exhibited specimens of the Elephant Fly of Ceylon, a Dipterous insect, belonging to the genus *Pangonia* and family *Tabanidæ*, and which has the power of



inflicting severe wounds on the elephant with its acute elongated proboscis, or rostrum. He also exhibited some remarkable rolls made at the extremity of the leaves of the Spanish Chestnut, about the size of a small thimble,

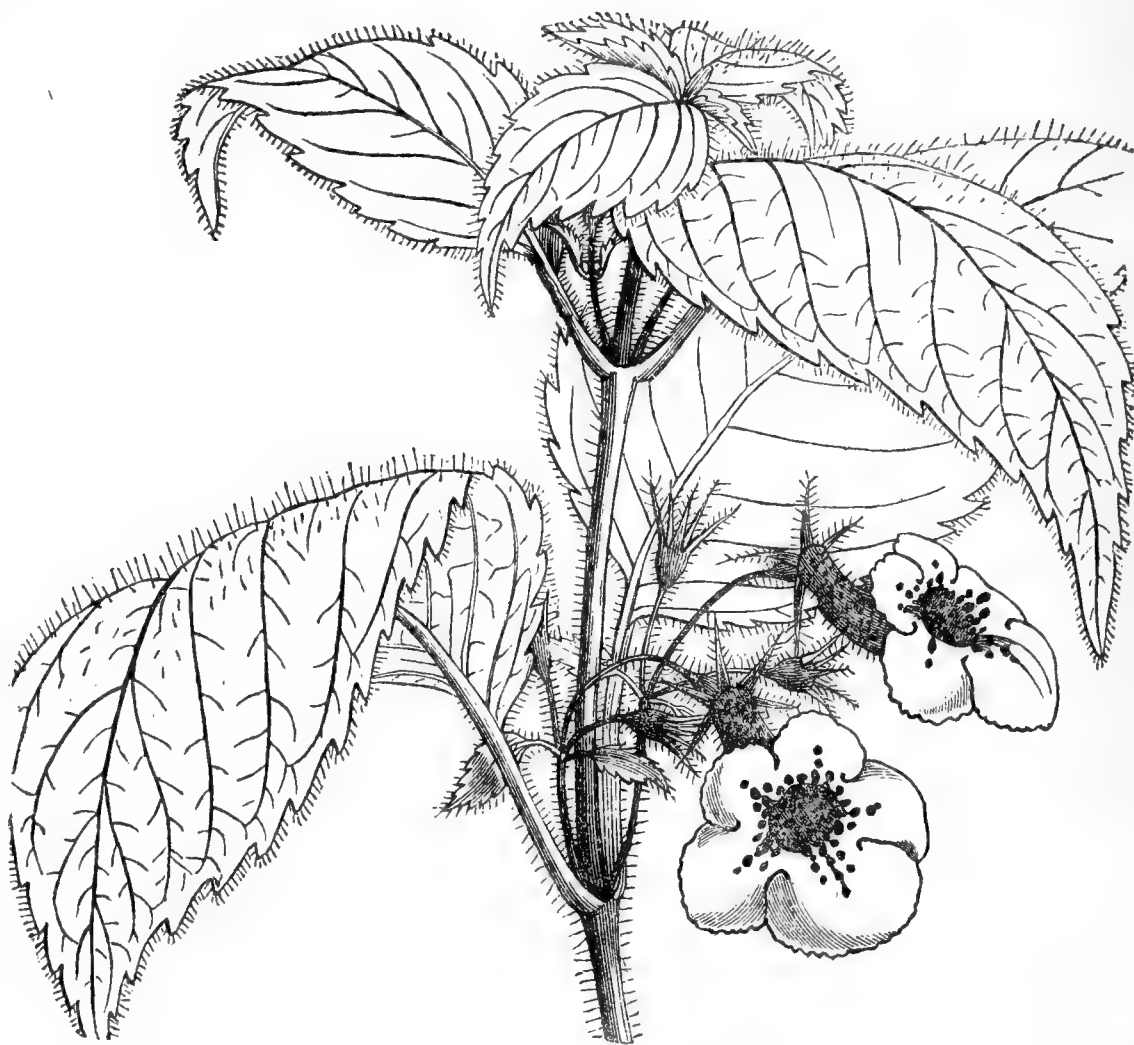
within each of which an egg had been deposited, and which Mr. Westwood considered to be the nests of some species of *Attelabus* or *Rhynchitis*, genera of Weevils which are known to possess such habits.

ACHIMENES CANDIDA.

PRESENTED to the Society by G. U. Skinner, Esq., in the spring of 1848, and said to be from Guatemala.

From a foot to a foot and a half high; stems purplish, nearly smooth, with a few scattered, spreading hairs near the upper end; leaves about four inches long; flowers about half an inch long, with a yellowish tube, and a white, flat, oblique limb, with a short line of purple dots along the middle of each lobe except the frontal one, and many more within the tube. Generally three flowers appear together, of which the central ones open first and the side ones some time afterwards.

It requires the same kind of treatment as the other sorts of *Achimenes*. Being a neat, free-blooming plant, it is worth cultivation on account of its white blossoms, an unusual colour in the genus.—(*Horticultural Society's Journal*.)



NOTES FOR SEPTEMBER.

WHOEVER may have doubts of the advantages of deep cultivation will have them removed this summer by a comparison of the crops growing upon deeply-trenched ground with others growing upon ground that had been dug only one spit deep. Where the system of deep cultivation is adopted he will see them luxuriating in the heat of the summer, while the frequent use of the watering-pot will be barely sufficient to keep alive the crops on the one-spit-deep system, with a hard and almost impervious bottom at the depth of nine or ten inches.

A successional plantation of *Endive* to be made, and some of the first sowing that had been planted out will now be in a good condition for tying up for blanching, a few only at a time, and to be tied loosely, to allow the heads to swell out large. The seedling plants of *Cabbage* intended to stand through the winter to be pricked out into nursery beds about four or five inches apart. A sowing of hardy green *Lettuce* may still be made on a sloping border to stand through the winter. To prolong the productiveness of *Scarlet Runners* and *Dwarf Kidney Beans* it is necessary to gather every large seed-pod. The *Spinach* to stand the winter to be thinned nine inches from plant to plant.

The FLOWER GARDEN will now require particular attention to keep up a neat and attractive appearance, by removing all shoots of *Verbenas*, *Petunias*, &c., that ramble beyond the bounds of the beds or borders, by cutting off decaying flowers, by cutting down or removing altogether all plants that are done blooming, and annuals that have become shabby. Any blanks that may appear should be filled up with plants from the reserve stock, plunged in their pots, taken up at the first approach of frost, and removed to their winter quarters. Continue to propagate showy and choice herbaceous plants by cuttings and divisions of the roots, and seedlings of late-sown perennials may still be pricked out with advantage. Continue to plant out *Pinks*, *Clove Carnations*, and rooted cuttings of hardy herbaceous plants into nursery beds. The plants already established in beds to be kept in a state of healthy vigour by stirring the surface of the soil. The lately-budded *Roses* to be looked at occasionally, the tyings to be loosened where necessary, and all suckers and shoots from the stock to be removed. If it is intended to preserve some of the old stock for flowering next year they should be taken up towards the end of the month, potted in good light soil, and

placed in a close pit, where they will have time to make fresh roots and to establish themselves in their pots before they are placed in their winter quarters. The old plants are sometimes more useful, as they cover more space and flower earlier and more abundantly than young ones.

The many publications of the present day on *Ferns* attest the fact that this class of plants is becoming more popular, and very justly so, as they all form leafy plants that are exceedingly interesting, and produce a root-stalk which either creeps below the ground, spreads over the surface, or rises into the air like the stem of a Palm. Rockeries of all descriptions are well adapted for Ferns, because these plants require less earth than most other plants, and, as they luxuriate most in shady places, they are very suitable for suburban villas. As this is the season when families visit their friends or make excursions or tours into the country, and as it is also a most suitable time for making a collection, we would commend to their notice the following native Ferns, which are not difficult to be found, and will produce a good effect on rockwork:—*Athyrium filix-femina*, *Lastræa filix-mas* and *dilatata*, *Polystichum angulare* and *aculeatum*, *Scolopendrium vulgare*, *Polypodium vulgare*, and *Blechnum boreale*, of the larger growers; *Cystopteris fragilis*, *Adiantum capillus Veneris*, *Ceterach officinarum*, *Asplenium adiantum nigrum* and *trichomanes*, and *Allosorus crispus*, of the smaller kinds. As gems, *Trichomanes radicans* and the two *Hymenophyllums*, *Tunbridgense* and *Wilsoni*. *Osmunda regalis* is a noble plant for a boggy spot.

As the seed-vessels of *Carnations* and *Picotees* on the same plant ripen in succession it is now advisable to go over them twice or thrice a week, cutting them off as they ripen with two or three inches of the stem to each, to be tied in small bundles and labelled. The late fine rains have been most favourable for planting out seedling *Polyanthuses*, *Heartsease*, *Pinks*, *Wallflowers*, *Canterbury Bells*, &c. Very many of such seedlings have been lately destroyed by a small grub that attacks the roots and foliage. Whenever, by the sickly appearance of the plant, you are led to suppose that the enemy is at work, by carefully removing the soil with the back of a knife you are almost certain to find the

grub. It feeds upon everything vegetable, and is always found near the surface. The most effectual plan is to catch it and kill it. The red underwing moth, that is considered so pretty by some as it flits in the summer through the garden, settles very frequently on the ground to drop an egg that is hatched into this grub. Its appetite is most voracious, and in a scarcity of more dainty fare it will feed upon a fresh plantation of Cabbages. We are also generally pestered at this season with slugs and earwigs. The destruction of the slugs is easily effected by placing small tiles on the beds, supported at the corners by pebbles, and fresh bran underneath; and the earwigs by placing small bundles of straight sticks in the paths on each side of the beds, to be untied and examined every morning. *Auriculas* to be guarded from wet, which is highly detrimental to them at this season of the year. Like the greenhouse and many other sorts of plants, as the days shorten and the winter approaches, by gradually withholding water and by free exposure in favourable weather they would be the better prepared for a comparatively dormant state.

The GREENHOUSE should be in readiness for receiving the plants when a change in the weather is apparent towards the middle or end of the month. When removing them to their winter quarters is the most favourable time to wash the pots clean, to examine the drainage if the surface of the pot appears sodden, to remove any moss or weeds, to surface them if necessary with a little fresh soil, and, if any worm-casts appear on the surface, by turning the ball of soil carefully out of the pot the worms are generally found the first or second time unless it is a very large pot, when the application of lime water in a clear state will banish or destroy them. As the dewy nights of autumn are very beneficial to plants the housing of them should be postponed as long as the weather will permit; but as it is especially necessary to guard against the possibility of the plants being exposed to heavy and cold rains, by which the soil would become saturated, it should be the desire to produce a gradual approach to dormancy in root and branch, which can be best attained by having them under control in the greenhouse, where, by pulling down the lights, or by any other means the most effectual for the free admission of air in fine weather, they could be easily protected from the injurious effects of heavy autumn rains. When arranging them in the greenhouse it is advisable to give sufficient space for the air to circulate freely around each plant, and to thin out any crowded shoots to ripen the wood. *Japan Lilies*, *Gladioli*, and such plants when done blooming to be removed to some warm, open situation at the foot of a south wall or fence to ripen their growth, to be watered moderately till the tops decay, when they may be laid on their sides till potting time. *Cinerarias* to be shifted in good time for early flowering, and the shifting of *Chinese Primroses*, *Calceolarias*, *Humeas*, and other such seedling plants to be continued for next season's blooming. The pits and frames should now be furnished with what bulbs may be required for forcing, with the *Anne Boleyn*, *Paddington*, and *white Pinks*, and *Neapolitan* and *Russian Violets*. *Mignonette* to be thinned out in good time and another sowing made, and *Calceolarias* to be divided and potted into sixty-sized pots, and placed in cinder ashes near the glass. The propagation of *scarlet Geraniums*, *Verbenas*, *Heliotropes*, *Calceolarias*, and all other such bedding-out plants must be now prosecuted with despatch. *Verbenas* strike freely in pans of wet sand. About the middle of the month the *Chinese*, *Noisette*, and *Bourbon Rose* cuttings strike freely in sandy soil in a close frame with a gentle bottom heat.—WILLIAM KEANE.

NEW BOOKS.

THE ADULTERATION OF OUR DAILY FOOD.*—Everybody wishes to obtain the most of the best possible article for the least possible money, and this is a chief cause of adulteration. Unfortunately those who are willing to pay a fair price are involved in the consequences incident to the prevailing cry for that impossible combination, a very good and very cheap article. This cry, however, is not the only

cause of adulteration, for, unfortunately, some things of daily consumption are liable to a heavy excise or custom-house duty, and the seller of these things obtains a profit just in proportion as he is able to increase their weight or measure by mixing with them things which are cheaper and liable to no duty.

To prevent such fraudulent adulterations the legislature has imposed heavy penalties upon the adulterators. For instance, by a statute passed in the fifth year of her present Majesty's reign, £300 is the mulct for adulterating tobacco and snuff; and a further penalty of £200 upon any manufacturer of these having the following ingredients in his possession, gives a startling catalogue of what fumes the present generation are in the habit of daily inhaling either into their mouths or noses:—"Sugar, treacle, honey, comings of malt, roasted grain, chicory, lime, umber, ochre, seaweed, ground wood, moss, weeds, leaves," &c. Beer, tea, coffee, bread, and many other articles are sought to be similarly preserved from adulteration, but with how little success is proved by the mass of unimpeachable evidence condensed into Mr. Dalton's useful little volume. We recommend our readers to purchase it, for it is a comfort to know what one is really doing when one is innocently eating one's bread and drinking one's wine. An extract of what Mr. Dalton says about the latter will be a good example of his book.

"Although the reader may not be surprised to find that WINE is adulterated, he will be interested at the *modus operandi*. Dr. Taylor says, 'I have had some experience in the examination of port wines on the part of the London Dock Company. It appears that port wine is sometimes manufactured out of bad clarets and bad Italian red wines, bought at 7d. a gallon; and then, by the addition of a mixture of geropiga, dried extract of elderberry juice, Lisbon grapes, brown sugar, brandy, bitter almonds, and logwood, a mixture is made up which is called London port. The wine I am speaking of was the subject of a trial at the Exchequer Sittings in Guildhall last summer, in a case in which the London Dock Company had been subject to very great frauds in consequence of the substitution of good port wine for this bad material. That stuff was bought at 7d. a gallon, and this wine was afterwards sold at from 12s. to 15s. a gallon, and the plaintiff in that case said he had a chemical mixture by which he could turn sour claret into very full-bodied port, and this was the substance which was supposed to be used.

"I have detected brown sugar, logwood, and brandy in English port. I am taking this as a matter of evidence, which was given upon the trial; it came out upon the trial what was the nature of this mixture. Geropiga is imported from Portugal as well as made in this country, and some of it is added to the wine even in Portugal. Geropiga or brandy is added to almost all the wine of Oporto. Cheap Italian wine does not pay duty as wine. It is what they call damaged wine, which the Dock Company, after it has been kept a certain time, sell at a low rate to make vinegar. It came out in this case that publicans bought it at 7d. a gallon, made the mixture I have referred to, and sold it at from 12s. to 15s. a gallon. If a person were ordered to drink port wine medicinally this mixture would not produce any of the effects intended by his medical adviser, but would be an astringent tonic mixture, and not good port wine.'

"I have occasionally analysed wine,' says Mr. W. Bastick, an analytical chemist, 'and have come to the conclusion that many which are sold are manufactured articles. I have a recipe which will show the Committee more distinctly what I mean by manufactured articles. It is said to be a recipe for making an imitation of good port wine:—Good cider, 45 gallons; brandy, 6 gallons; good port, 8 gallons; ripe sloes, 2 gallons; stew them in 2 gallons of water, press off the liquor, and add, if the colour is not strong enough, tincture of red sanders; in a few days this wine may be bottled; add to each bottle a tea-spoonful of powdered catechu, mixing it, when it will very soon produce a fine crusted appearance. The bottles being packed on their sides as usual, soak the ends of the corks in a strong decoction of Brazil wood with alum, which, along with the crust, will give it the appearance of age.

"I believe that the person in whose book this receipt was found was in the habit of making port wine and vend-

* A Key to the Adulteration of our Daily Food. Compiled by W. Dalton. London: E. Marlborough and Co.

ing it, or using it himself, of the nature of that composition. He was a general trader, such as you find in country towns; and I believe every manufacturing druggist has a similar kind of book, from which he makes his compositions.'

"'Wine,' adds Dr. Challice, 'is an absolute necessary for the poor when they are recovering from sickness; they have no means of getting pure wine; the adulteration of it is fearful. I have seen many instances in which, when I have recommended port wine, and it has been procured at public-houses, instead of acting as a wholesome stimulant and a restorative astringent, it has produced pain, acidity, griping, irritation, and mischief, instead of good. It is a matter of notoriety, I believe, that a composition is sold as a substitute for port wine.'

"'I believe the astringency imparted to the liquid is by alum; I believe there to be an infusion of logwood, also sloe-juice and sugar; it is a chemical combination entirely different from port wine; it does not taste like it; the taste is sufficient to deceive a poor person. The poor have a great craving for wine; they believe it is a luxury that will restore them to health.'

"'I believe sherry is manufactured out of brandy: brandy and water, flavoured probably with some bitter almonds or something of that kind.'

TRENTHAM AND ITS GARDENS.*—This contains much more than its title leads the reader to expect. From the title we were prepared for a mere dry catalogue of the contents within the inclosure of this far-famed seat of the Duke of Sutherland; but, so far from this being the case, it is a very readable and amusing history and description, not only of Trentham and its gardens, but of various places in its close vicinity, and of what will interest not only the desultory traveller but the man of science. We can afford space but for this brief extract:—

"The nightingale has sometimes, but rarely, been heard at Trentham; but the mock-nightingale, or black-cap warbler (*carrucca atricapilla*), inferior to it alone in sweetness of song, may be heard in early summer. We have also noticed the chiff-chaff, the creeper, and the golden-crested wren, all amongst the most diminutive of the feathered tribe.

"The botanist, too, may meet with many rare or interesting productions of Flora to reward his curious research. In the woods spring the curious Helleborine or Serapion (*Epipactis latifolia*), the pretty Bitter Vetch (*Orobis tuberosus*), and the rare Leopard's Bane (*Doronicum*), contrasting beautifully, with its bright yellow, starry flowers, with the purple Foxglove. Nor must we forget the rich carpeting of the wild Hyacinth, occasionally found here with white flowers. *Geranium pratense* and *Campanula latifolia*, both amongst the handsomest of our wild plants, may also be found in damp, shady spots. In the park, over the brow of the hill, are some fine ancient specimens of the wild Service tree (*Pyrus torminalis*). In the gravel pits may be picked the minute Bird's-foot Trefoil (*Ornithopus perpusillus*), and a very pretty, bright, crimson-flowered Vetch (*Vicia angustifolia*). We may also mention that the rare and beautiful *Polypodium dryopteris* grows in the spring valley. *Asplenium ruta-muraria* is common on the walls about, and many species of *Aspidium* or Shield Fern abound in the woods. The spring in the beautiful dell just mentioned is worthy of notice. It is very copious, clear as crystal, and at its source is always of the temperature of 48° Fahrenheit, winter and summer. In its purling stream, which divides the parish of Trentham from Stone, may be found specimens of *Hypnum ruscifolium* and the beautiful *Draparnaldia*; and on the stones abound specimens of the pretty little fresh-water limpit (*Ancylus fluviatilis*).† Many years ago an avenue of very fine Lime trees extended from the west front to the then extremity of the park—a cluster of trees near the deer barn. A few still remain to point out the original line; and when perfect it must have been an imposing and noble approach, being upwards of half a mile in length. There is no doubt they were planted soon after

the erection of the Priory. The Lime was a favourite tree with ecclesiastics, and many monasteries were ornamented with similar avenues. The wood is much used by wood engravers in their profession. Bewick, the restorer of that fine art, used it in the production of some of his most beautiful specimens. Its bark is used in many countries in mat making. Independently of its fine proportions the Lime is of a peculiarly fragrant order, being covered in July with blossoms of a yellow-white colour, which impregnate the air for some distance around, and form the extensive working fields of innumerable bees every hour of the day."

ARCHIBALD GORRIE.

WE give the following extracts from the *Northern Warder*, as they contain additional information to our notes on this distinguished cultivator. This sketch is from the pen of Mr. George Lawson.

"Mr. Archibald Gorrie was born in the district of Logie Almond, Perthshire, in the year 1777. In boyhood he received what was then considered 'a good country-school education.' This was afterwards supplemented by various studies in his early life, to an extent which will be indicated by the facts we have to mention respecting his discoveries and writings. Although 'by birth an agriculturist,' yet horticulture soon became his most favourite pursuit, and he was placed as an apprentice in the gardens of Logie House, under Mr. Peter Barnet, father of the Mr. Barnet who afterwards became superintendent of the Experimental Garden of the Caledonian Horticultural Society, Edinburgh. From Logie House gardens Mr. Gorrie removed to Dupplin Castle, also in Perthshire, where, under the then superintendent, Mr. Miller, and with George Don, the celebrated Forfar botanist, as a companion, he enjoyed every advantage for prosecuting his favourite study of British botany and other departments of the natural history of his native land.

"Towards the end of the last century he had charge of the hothouse department in Leith Walk Nursery, where he first became acquainted with the late Mr. J. C. Loudon, who succeeded him in that charge; an acquaintance which was again renewed when Mr. Loudon commenced the publication of his *Gardeners' Magazine*, and was continued till the close of that talented writer's useful life; and we believe that after his death a lively remembrance of that friendship was cherished by Mrs. Loudon, who continued to correspond with Mr. Gorrie. A knoll near Annat Cottage is called 'Loudon's brae,' having, we believe, been planted with Coniferae chiefly obtained from Mr. Loudon.

"During the last fifty years Mr. Gorrie resided on the estate of Annat, in the Carse of Gowrie, acting successively as gardener, general manager, and factor on the property. During a considerable portion of that period he rented the neighbouring farm of Shanry, and his previous acquaintance with horticulture was of great service in prompting to the introduction on his farm of improvements in cultivation and of novelties in cropping. He reached the ripe old age of eighty, and was cut off by an attack of bronchitis on the 21st of July.

"In 1834 *Vicia villosa* was added to the list of British forage plants by Mr. Gorrie, who discovered its seeds in a cargo of Dantzic wheat, and pointed out its applicability as a winter tare. In the same year he discovered a fertile-seeded variety of the tall Fescue Grass (*Festuca elatior fertilis*), which was subsequently propagated; and in 1840 he introduced the Wood Millet Grass (*Milium effusum*) to cultivation. (*Lawson's Treatise on Cultivated Grasses, &c.*, p. 17.) In short, the cultivation of the natural Grasses and herbage and forage plants afforded him a constant source of profitable recreation.

"To say that his mind was well stored with knowledge would be an inaccuracy of expression, for his knowledge was not laid up as in a storehouse, but was so completely assimilated that his mental character grew, as it were, upon it, so that in communicating his thoughts to others he did not merely deal out facts and ideas in the crude form in which they had been received; they became so elaborated by the (perhaps to him insensible) operation of his powerfully original mind, that it was impossible to draw the line

* *Trentham and its Gardens*. With ten illustrations on wood from original drawings and photographs. London: Piper and Co.

† The author is indebted to the kindness of Robert Garner, Esq., F.L.S., author of "The Natural History of Staffordshire," for the principal part of the above interesting remarks on the zoological, botanical, and geological specimens of the neighbourhood.

of distinction between what was acquired knowledge and what was spontaneous thought. And in this, as in the case of every popular writer, lay the secret of his success in rendering interesting the most barren details of rural operations. We have long regarded Mr. Gorrie as one of the most intelligent writers on rural affairs and natural history which Scotland has produced; and Scotchmen will do well to cherish his memory as that of one who in his quiet and unobtrusive life has done great and lasting good to their country by his personal influence, by his genial writings, and by his improvements in the art of rural industry. Annat Cottage has long been in *our* minds the Selborne of Scotland, and Archibald Gorrie the Gilbert White thereof. Annat Cottage, when we first saw it, seemed to us of early, very early dreams, the combination of all that is beautiful and simple in rustic adornment, with that quietness and beauty within which can dwell only where the intelligent mind is linked to the generous heart, where nobleness and humility of character, devout love to God, and genuine affection in the family circle shed happiness over all.

"In private life Mr. Gorrie was a man of genial and generous disposition, strict in the observance of religious ordinances, and of exemplary piety, ever ready to give friendly advice to the young, as a genuine Christian would, without one particle of hypocrisy or self-sufficiency, and ever prompt to check even the appearance of evil. He had withal a quiet humour, and a joyous smile played on his countenance while he told a droll story about some crack-brained naturalist, or detailed an interesting observation in science. It did one's heart good to see an old man so happy.

"Mr. Gorrie was for many years an elder of the Free Church, and on at least one occasion he was chosen as a representative at the General Assembly. He took much interest in ecclesiastical affairs, as in everything calculated to advance the cause of religion; but he was ever ready to receive in a truly friendly manner those who differed from him in religious matters, and to converse with them in a spirit void of all offence, and that was calculated to make an impression that could not be soon effaced.

"Throughout his long life he was 'continually doing good' in attempts to improve either the temporal or the spiritual interests of those within his reach.

"Mr. Gorrie will be long remembered as a link that bound the naturalist of a past age with those of the present."

EFFECTS OF SPRING FROSTS ON PEAR BLOSSOMS.

By RICHARD VARDEN, ESQ., SEAFORD GRANGE, PERSHORE.

(Continued from page 228, Vol. XVII.)

7. THE observations were extended to Perry kinds, but not knowing the names (many being unknown seedlings), very little benefit could result, as the great difference of their hardiness, even in similar localities, rendered averages or comparisons imperfect; for instance, it was found that the number of bad blossoms ranged as under:—

A tree at 114 feet above sea level, all bad

"	75	"	"	"
"	63	"	"	"
"	60	"	"	"
"	48	"	"	"
"	47	"	"	none bad
"	45	"	"	"
"	36	"	"	"

with almost every intermediate degree of damage in the others. These blossoms were taken without reference to average state, just as they happened to be gathered, and none of the trees named were particularly sheltered.

8. On comparing the Perry trees growing on the western or sheltered side of the hill, the average of 22 trees gave 33 damaged blossoms in the 100; while, on the eastern or exposed side of the hill, the average of 33 trees gave 41 damaged in the same number—a difference of about 25 per cent. in favour of the sheltered aspect.

9. Little or no difference was perceived in the amount of damage done to trees of 15 or 20 years old, and to trees of from 80 to 100 years; the average being 32 per cent. of damage to the former, and 31 to the latter. Quite young trees indicated a much larger amount of damage, but the point was not investigated, the necessary materials for a fair comparison not being at hand.

The foregoing examinations were made on the 31st of April, and the 1st and 2nd of May, 1855; after which, owing to the occurrence of more severe frosts, which entirely destroyed the blossoms of many choice varieties, they were discontinued. There was no fruit (except Perry kinds) on any of the trees examined, except a few Williams' Bonchrétien. The May frosts completed the destruction of all the blossoms of table varieties.

The temperature of the nights, as registered at Worcester, eight miles distant, at a spot 100 feet above the sea, was as follows:—

	Minimum in Shade.	Radiating on Grass.
March 1	36	32½
" 5	30½	28½
" 6	28	24½
" 7	31	28
" 8	30½	26
" 9	29	27
" 10	29	28
" 12	27	24½
" 14	32	30
" 20	31	28
" 22	32	31½
" 23	32½	31½
" 24	31½	30
" 26	24½	21
" 27	26	21
" 28	31	28
" 29	30	27½
" 30	25	22
" 31	28½	25½
April 2	22½	18
" 3	32	31
" 5	31	28
" 18	35	31
" 19	31½	26
" 20	38	32½
" 21	32	27
" 23	26½	22
" 24	29	25
" 26	36	30
" 27	30	24½
" 30	32	26

Many of the foregoing frosts were accompanied by strong winds from the east and north-east, but not much wind from other quarters. The examination of the blossoms was made between this and the 3rd of May, after which the temperatures were as follow:—

	Minimum in Shade.	Radiating on Grass.
May 3	28	22½
" 4	33	31
" 5	25	20
" 9	28	22
" 12	36	32
" 17	35	29
" 18	30	27
" 23	37½	32

The above observations add little or nothing to the existing knowledge of frosts; but the results being given in figures, are in some respects more definite and convenient for comparison than description can be, and on this ground may prove interesting to fruit growers. Should the method of investigation adopted be considered sufficiently correct, the system might with advantage be extended to various localities, and the results, when collated, given as rules to assist fruit planters in the selection of sites and varieties for orchards, &c., and might perhaps lead to the discovery of laws regulating the action of frost at present hardly anticipated. If such a labour were undertaken by the Pomological Society it would have great prospect of success. Perhaps the first series of experiments might with advantage

be confined to some one well-known and widely-diffused variety, such as the Jargonelle, which, if numerous reported on, might be made an idea for comparing the earliness or lateness of localities, aspects, elevations, &c., by the dates when the blossoms pass through the several stages of bud, flower, and setting; and also give, by noting the percentage of damaged blossoms, a more correct idea than we at present possess of the relative effects of frost under the various circumstances of latitude, elevation, aspect, &c. In after seasons, when other varieties are under examination, the results could, by comparison with a Jargonelle growing under similar circumstances, be reduced to a common standard by simple calculation.

SUMMARY.

1. Blossoms in bud are less injured by frost than those in flower; hence, as frosts decrease in severity as the season advances, late blossoming is one source of hardiness.
2. When frosts are accompanied with wind, the injury to blossoms is lessened by hedges or screens on the windward side of the trees.
3. Varieties differ in hardiness, though their blossoms be equal in forwardness.
4. Blossoms on low ground are occasionally as safe, or safer, from frosts than on high grounds.
5. Varieties may be arranged according to their power of resisting frost, but not at present, from want of sufficient data.
6. The blossoms on free-flowering varieties are so numerous, that five per cent. would be sufficient for a crop if they arrived at maturity.
7. Varieties differ so much in hardiness, that occasionally frosts, which destroy all the blossoms of one kind, leave all the blossoms of another uninjured.
8. When frosts are accompanied with wind, the injury to blossoms is greater on the windward than on the leeward side of a hill.
9. The blossoms of old trees, and growing trees if not very young, are equally hardy.—(*Transactions of the Pomological Society.*)

QUERIES AND ANSWERS.

POTATO TUBERS VEGETATING.

"I am induced to request the advice of THE COTTAGE GARDENER on a subject quite unusual, and which apparently puzzles the gardeners in this neighbourhood. The Potatoes in my garden and others have commenced growing as in their usual season, many having long shoots already. At first I thought it was entirely owing to the earliest kinds having been ripened before their time, which has been the case with the *White-blossomed Kidneys* and the *Red Ash-leaved*, caused by the long drought and great heat in a very dry soil; but on examination I find the *Fluke Kidneys*, and *York Regents* also, shooting, neither of them half ripe, the tops being only just coming into bloom, and the Potatoes clinging firmly to the roots. I do not know whether to dig them all up at once or not, as it seems that either way they will be injured. In this dilemma it would be a great obligation to myself and others if you could put a few words in this week's number merely to say dig or do not dig your Potatoes. Then perhaps you could, in a following number, give an explanation of this remarkable occurrence against the usual course of nature, seeing that seeds in general do not vegetate before they are ripe."—H. A. S.

[It is usually the case, when rain occurs in the early part of August after a long continuance of dry weather in July, that the tubers vegetate, and produce a crop of young tubers. Knowing this we took up all our early Potatoes at the end of July before any rain occurred, and there was not a vegetated nor a diseased tuber among them. Our later sorts have vegetated, and will not be harmed by such vegetation, because the stems are still vigorous, and the shoots put forth by the tubers will produce other tubers, not at the expense of those first formed, but will be supplied with sap for their growth by the still vigorous stems. We shall not take up the crop until the stems intimate by decay that their power to prepare sap for the tubers is gone. The older tubers will then be ripe, and we do not expect to find them injured by the production of their later brethren.]

REMOVING AUCUBAS.—WALNUT TREE ON A LAWN.

"I wish to remove some Aucubas, fine shrubs five to seven feet in height, from the border at the bottom part of the back garden into the front. Can I do so with safety to the plants? and, if so, what would be the best time of the year to remove them?"

"Will you also inform me whether a Weeping Walnut would be a suitable tree for the centre of a grass plot about thirty feet each way?"—T. S.

[Now and for the next two months is the best time to remove large Aucubas; but there is not the least fear in moving such any month in the year: their numerous fleshy and fibry roots carry such large and such occupied balls as would render it difficult to kill the Aucuba.]

A Walnut of any kind would be amongst the last trees we should plant on a grass plot, or even near a house. The Black American Hickory is the best of the Walnut race for a lawn or a plot; but for you at Dalston one of Cobbett's Locust trees would be the best to flourish, and to give summer shade, fragrance, and bee flowers in the face of all the smoke from London. Botanists call it *Robinia pseudo-acacia*. Get one ten feet high, and with a six feet clean stem, plant it at the end of October, tie it with three cords to three pegs stuck into the grass a yard from the stem, and cut it or prune it as they do young Pear trees at the first planting, that is, cut out entirely all the very small twigs and all the strong young wood of the last growth to a few inches. Water it well the first summer, and keep the head rather thin by summer pruning for the next half-dozen years, and you may have the finest tree in Middlesex. What makes so many bad trees round London is that they never thin the branches in summer.]

TO CORRESPONDENTS.

FRUITS v. FLOWERS (J. S.).—We are much obliged by your notes, but you have omitted the *only* weighty reasons why flowers are more cultivated than fruits, viz., that flowers occupy less space than fruits, will grow in places where to cultivate the latter would be hopeless, and flowers can be obtained in perfection during one season, whereas fruits require several years to elapse before a satisfactory return can be obtained.

FUCHSIA SEEDLINGS (B. A.).—The dark one after the style of *Globosa* seemed of excellent form, but both that and the others were spoiled in the carriage. Damp moss in a stout box is the only means of conveying flowers safely.

SOWING APPLE AND PEAR PIPS (J. S.).—The best time for doing this is in early spring, March and beginning of April. The fruit of the seedlings is *not* invariably worse than that of their parents. If it were, how could improved varieties be obtained? It is quite true, however, that by far the greater part of such seedlings yield mere crabs.

PRESERVING FRUIT (A Constant Subscriber).—Put the fruit into bottles or jars, and the jars into a saucepan of water; make this boil, cork the bottles or jars closely, and seal them over whilst quite hot; keep each in the boiling water until taken out for corking.

DIELYTRA SPECTABILIS (A Constant Reader).—Ample directions have already been given in the different numbers of THE COTTAGE GARDENER concerning the culture, &c., of the *Dielytra spectabilis*. It can be lifted out of the borders into pots of suitable size at any time after the stems of the plants have died down naturally, or in the spring just as the crowns are beginning to appear again, which is also a good time to divide the roots. Plants thus lifted, with a little care, into large pots flower admirably in a cool and airy conservatory. Those lifted in the autumn for frame or other protection can be excited into flower much earlier. The best method of keeping *Filberts* and *Walnuts* is to put them in bulk in jars bunged closely, and placed in a cool cellar. Either *Filberts* or *Walnuts*, if they are kept in too moist a condition, are very soon spoiled, and of course, if kept in too dry a situation, the kernels become shrivelled.

TANK (T. Wickham).—Your note has been overlooked. We will answer it next week.

WIREWORM (T. W. S.).—We know of no means of getting rid of the wireworms in your field of Beetroot. Powdered oil cake is said to kill them, but we must leave to your own ingenuity how to apply it.

NAMES OF PLANTS (A Subscriber).—Your purple-eyed greenhouse climber is *Tecoma jasminoides*. (Mortlake).—No. 1. *Rhus cotinus*, or Venetian Sumach. No. 2. *Punica granatum*, or common Pomegranate. (M. C. D.).—Your first-mentioned plant is *Sedum acre*, and not *aureum*. Your *Sedum* No. 1 we do not know; it may be *S. glaucum*. No. 2 is the *Sempervivum tectorum*, Common Houseleek. No. 3 is *Saxifraga hypnoides*, from the Alps and other places; frequently seen in gardens, but not common in a wild state. The small plant sent is the *Linaria cymbalaria*, or Ivy-leaved Toad-flax. *L. spuria* and *L. elatine* are the next allied plants, both annuals, and frequently found in chalky fields, &c.

CUTTINGS OF PHLOXES (M. F.).—Every inch of a Phlox will make a cutting, and even their flower-stems if cut into two or three-inch lengths, and planted in sandy earth, either in pots or under bellglasses, in the open borders, properly shaded and watered.

NAME OF INSECT (W. L.).—The Lace-winged Fly; not at all uncommon.

A CORRECTION.—“On referring to page 149, Vol. XVIII. of *THE COTTAGE GARDENER*, I noticed an error in a paper of Mr. Appleby's, and which I believe has never been corrected. He says, ‘I was much pleased with two octagon vivariums, &c., sent by Messrs. Sanders and Doughty, of London, &c., and Mr. Alford, Portland Road,’ &c. The names of the makers of the aquaria referred to are Messrs. Sanders and Woolcot, of Doughty Street, London, and Mr. Alford Lloyd, of Portland Road, London.”—S. H.

TAMARIX GALICA (Coves).—This, the French Tamarisk, is found on the rocks, cliffs, and sandy shores of the southern and western coasts of England. In Cornwall it is plentiful on St. Michael's Mount, and everywhere about the Lizard Point, but chiefly on the banks of earth called Hedges. In Hampshire on the beach near Hurst Castle and Freshwater. In Kent it forms the ornament of Sandgate, flourishing upon its sandy banks, and flowering thrice within the year. In Suffolk by Langward Fort. In Sussex on the cliff to the east of Hastings. This elegant shrub is frequently found in sandy places in France on the shores of the Mediterranean Sea, and of the Atlantic Ocean as far as Poitiers. It is also found upon the banks of rivers in the south of Europe, north of Africa, and west of Asia. It is likewise a native of Tartary, Barbary, the Himalayas, and Japan. It is the *Myrica* of the Greeks, and the *Tamarix* of the Latins. Its bark is slightly bitter and astringent, and its ashes contain a great quantity of sulphate of soda. In the south of Russia and in Tartary it assumes a great variety of forms, according to the soil and situation. The tops of the dwarf plants are there eaten by sheep in preference to any other food, and the stems of the larger ones are used as handles for whips. Evelyn tells us that it was considered of old one of the unfortunate trees, and under malediction, and therefore used for wreaths to put round the heads of malefactors. He says, also, that drinking vessels were made of the wood. This pretty Cypress-like-looking shrub forms one of the most ornamental hedges imaginable in localities where it can enjoy the sea breeze. The case of pruning or reducing the hedges to a certain thickness and height should be performed with a knife, not with shears.

DISEASED PEAR LEAVES (W. M.).—Apply the lime and sulphur immediately, and at any time, but the mixture will adhere to the leaves best whilst the dew is on them. You have allowed the trees to be injured a fortnight needlessly.

PARSNIP WINE (Home-made).—To make six gallons of wine put eight gallons of water into a boiler, and add thirty pounds of sliced Parsnips. The Parsnips must have been previously scrubbed quite clean, all fibrous roots and brown specs cut away, each root split lengthways into quarters, and these sliced into two-inch lengths. Boil for about two hours, or until the slices of Parsnip are all tender; but it is indispensable that the slices are not bruised or reduced to a pulp. Do not cover the boiler, but let the pungent essential oil of the Parsnips pass away with the steam. Strain the liquor gently through a hair sieve into a tub without bruising the slices. Add immediately three ounces of white argol, stirring the liquor for some minutes to complete its dissolving; then dissolve in it eighteen pounds of loaf sugar. Let the liquor remain until cooled to about 72°. Put into the liquor a toast formed of a slice, three quarters of an inch thick, from a two-pound loaf, and well soaked with fresh yeast that is not bitter. Do not stir the toast into the liquor, but merely let it float upon it. Cover the tub with a flannel, and keep it in a regular temperature of from 50° to 55°. When fermentation has commenced take out a bowlful of the liquor, and pour it in again gently, to spread the fermentation, and, when this has increased, agitate the liquor more strongly in the same way. As yeast forms on the surface skim it off. When this formation of yeast has been taken off twice put the liquor into a six-gallon cask. If a sweet, rich wine is required fill the cask up till it runs over at the bung-hole, and reserve some in a bottle tied down with bladder. As yeast flows out from the bung-hole fill up from the reserve bottle. When this flow ceases paste a piece of brown paper over the hole, and after a week put in the bung, loosely at first, but tightly after the sound of fermentation ceases. For making a dry wine let the liquor ferment in the tub two days longer than for the sweet; skim it before putting it into the cask, and do not fill the cask with it to more than two inches from the bung-hole; cover this hole with a piece of slate, and frequently stir the yeast into the liquor. Have a reserve in a stone bottle or bottles tied down. Ferment in the temperature as before directed. When it does no more than hiss or sing put in the bung, and roll it over three or four times; then loosen the bung, and replace the cask on the stand. Repeat this rolling after four or five days, and continue it until the hissing subsides to a scarcely audible fretting; then bung down firmly, and rosin it over closely.

ANTIRRHINUMS (D. R. White).—We have nothing to add, as to the characteristics of these flowers, to what we have stated in “Florists' Flowers for the Many.” We do not think it necessary for the inner surface to differ in colour from that of the tube.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

AUGUST 26th. BRADFORD. Secs., M. Brooksbank and H. Beldon, Esqs., 12, Queensgate Street, Bradford. Entries close August 18th.
AUG. 29th. CALDER VALE. Sec., W. Irvine, Esq., Holmfieled, Halifax. Entries close August 15th.
SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.
SEPTEMBER 4th. SOWERBY BRIDGE. Sec., F. Dyson, Esq. Entries close August 26th.
SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Sec., Mr. H. Churchill, King's Head Hotel.

SEPTEMBER 9th. HECKMONDWIKE. Secs., Mr. G. H. Rhodes and Mr. Fred. Brearley. Entries close August 31st.

OCTOBER 1st and 2nd. WORCESTER. Sec., Mr. G. Griffiths, 7, St. Swithin Street, Worcester. Entries close Sept. 19th.

OCTOBER 7th. SOUTH WEST MIDDLESEX AGRICULTURAL SOCIETY. At Gunnersbury Farm, Ealing. Sec., J. Gotelee, Hounslow.

NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.

DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.

DECEMBER 30th and 31st. BURNLEY AND EAST LANCASHIRE. Entries close December 1st. Secs., Mr. Angus Sutherland and Mr. Ralph Landless.

JANUARY 4th, 1858. KIRKCALDY POULTRY AND FANCY BIRD SHOW. Sec., Mr. Bonthron, jun., Thistle Street.

JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.

JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.

FEBRUARY 3rd and 4th, 1858. PRESTON AND NORTH LANCASHIRE. Secs., Mr. R. Teebay and Mr. H. Oakey, Preston.

N.B.—Secretaries will oblige us by sending early copies of their lists.

CREVE CŒURS AND THEIR CROSSES.

SINCE I first began to devote any attention to poultry it has been my invariable practice to test the value of the various crosses of the breeds that I have been keeping. For the last two seasons I have had a run of Crève Cœurs, and it may be remembered, by some of my readers, that I was the first to call attention to their merits in a translation from the French, inserted in Vol. XVI., p. 265, of *THE COTTAGE GARDENER*. To the account there copied I have but little to add. My own extended experience enables me to state positively the following facts regarding them:—

That they are unsurpassed by any other variety as table fowls, being large, white-fleshed, short-limbed, and very full breasted; that they lay larger eggs than any other variety whatever, not even excepting Spanish. My birds of last year did not begin to lay early; but, as my poultry diary shows, the four hens averaged nearly three eggs a day for months, viz., 93 eggs in March, 89 in April, and 82 in May, not one of them becoming broody until late in June.

It is, however, to the extraordinary merits of the cross-bred birds as table fowls and early layers that I wish to call attention. My first brood of nine cross-bred chickens was hatched on March 2nd, 1857; they were bred from a Crève Cœur cock and Dorking and Cochin hens. The clutch were never in a house in their lives, the hens being cooped in wet weather under a large, dry, open shed, the young ranging the field at will, and running out in the late snow we had this last spring. On May 26th I killed a cockerel of the brood caught up out of the yard; he weighed 4 lbs. 6 ozs., and when trussed for roasting exactly 3 lbs. One of the pullets, of which there were four, began to lay on the 1st of August; the others I purposely kept low in flesh, as I wished to show them at the Crystal Palace Exhibition, but the pair sent there have both laid since their return. The weight of the cockerel shown at the Exhibition was 7 lbs.; that of the pullets rather over 5 lbs. each. As table birds both the Dorking and Cochin cross are first-rate; the latter, I was pleased and surprised to find, had very white skin and fat, and were plump, full-chested birds. I may mention that the cock at the Show was the Dorking, the pullets the Cochin cross; and the latter, although of such rapid growth, were bred from rather small Cochin hens. My object in sending a mismatched pen was twofold. Firstly, I wished to show both crosses; and, secondly, for private reasons I purposely designed to disqualify the pen from any chance whatever in competition: this I effectually did by sending a clean-legged cock and feather-legged pullets.

For the information of those who did not see the birds I may add that the Cochin-bred pullets are black, with a silvered hackle, and that the cocks have a larger proportion of light feathers in their hackle and saddle.

To those who wish to breed birds for profitable purposes, and require large table fowls and early eggs, I cannot recommend a better cross. Three Dorking and three Cochin hens, with a Crève Cœur cock, would give a supply of table fowls that, for rapid growth, large size, hardihood, and early laying, would, I am confident, surpass any other variety; and when cooked they would be found plump and white in skin and fat. Of course as exhibition fowls they would be worthless, although it would render Poultry Shows of more practical utility if a prize were offered, in the extra variety

class, for the best pen of chickens, cross-bred or otherwise, *considered exclusively with reference to table purposes.*—W. B. TEGETMEIER, *Tottenham.*

TURBIT PIGEONS.

I TRUST that Mr. Brent will not think I am stepping beyond my proper sphere in offering a few remarks on his paper on Turbits; but as an admirer of the variety, and as the possessor of some exceedingly good specimens, I am anxious to say a few words respecting them. Of the correctness of the description given of the form of the bird, of its frill, gullet, head, eyes, and beak, there can be but one opinion. I am glad to see Mr. Brent lays so much stress on the gullet, a point often wanting in otherwise good birds.

In the list of colours the Silver-shouldered, a very beautiful variety, are not mentioned, although alluded to in a previous part of the paper. The fact that Turbits had formerly coloured tails to match the shoulders is stated. To this I have an interesting addition, namely, that some strains are now *throwing back* to the original character, and producing dark-tailed young ones. Thus the birds shown as *Meeves* by Mr. Harrison Weir may be described as Black-tailed White Turbits. Mr. Summerhayes informed me that he had some produced in his stock, and in some very good Silver-shouldered birds that I possess about half are bred with a greater or less number of dark tail feathers. This reproduction of a character that has been some time in abeyance is of much interest in a scientific point of view.

I hardly agree with Mr. Brent regarding the White Turbits. I have birds of that colour that certainly are Turbits, and not Owls. Moreover, the old writers described other Turbits of an entire colour, as Blues and Blacks. Of the first of these I also have specimens.

As fliers I can readily believe the old account of their flying as high as Tumblers, for three or four of mine will often start off, and ascend till I nearly lose sight of them. I have tried some of these as homing birds; but, although they will fly home a few miles, they are a long time on the journey, frequently in the first instance going out of sight in the wrong direction. As breeders I have found them productive. One very good pair have given me a nest of young ones every six weeks for the last ten months.

The next important point in which I differ from Mr. Brent is respecting the turn crown. I regard its presence as essential to success in competition, and I am quite sure that nineteen-twentieths of the Pigeon Judges are of the same opinion, and therefore caution my readers against sending out any Turbits to a show in which there is not either a turn crown or a point at the back of the head.—W. B. TEGETMEIER, *Tottenham.*

GLASGOW POULTRY SHOW.

THE annual Exhibition of Poultry, in connection with the Agricultural Society of Scotland's Show, was held this year at Glasgow on the 4th, 5th, and 6th days of August. I believe that this Society was the first in Scotland to offer premiums for poultry; and, to judge from the quantity and quality of the fowls exhibited on this occasion, one would say that the unusual competition for their handsome silver medals has not been unproductive of good.

The *Dorkings* came first on the list, and I have seldom seen so good a show of adult birds. They were brought from all parts of Scotland, and several came from "over the Border."

Spanish were nowise inferior, and the two prize pens were really good birds. The hens in the second prize pen were very near perfection. There was an indifferent show of *Turkeys*, three very good pens of *Geese*, and some good *Aylesbury Ducks*. The first and second prizes in the "promiscuous" class were awarded to old Scotch fowls—grey-speckled birds, resembling Cuckoo *Dorkings* minus the fifth toe. In all there were 143 pens.

That most necessary adjunct to the enjoyment and success of an open air show, fine weather, was not wanting, and in the three days it is calculated that about 50,000

people visited the grounds. On Wednesday the lords of the creation mustered strongly, and there was in all respects a fair sprinkling of the gentler sex, to whom, of course, the poultry pens were the centre of attraction.

But Thursday was *the* day. By rail and road the crowds came in, till the pavements of the usually busy, bustling city were quite thronged; and, as I became part of that elongated line of human beings, I fully realised with Byron what it is to be "a link (though not, perhaps, *reluctant*) in a human chain."

The Queen of the Netherlands on this day visited the Show-yard, accompanied by the Duchess of Baden-Baden, and escorted by the Dukes of Athol, Hamilton, and Montrose, the former of whom had a large retinue of Highlanders in full costume.—GALLUS.

The following is a list of the prizes awarded:—

DORKINGS (Coloured).—First, G. Baillie, jun., Mellerstain, Kelso. Second, A. Cunningham, Craigends, Johnstone. Commended, H. Hayes, Springfield House, Barrhead.

DORKINGS (White).—First, R. Russell, 80, Canal Street, Paisley. Second, R. Westbrook, Brookall, Paisley.

COCHIN-CHINAS (Coloured).—First, M. Buist, Tynninghame, Prestonkirk. Second, D. Stratton, road surveyor, Airdrie. Commended, Mrs. Fergusson Blair, of Balthayock, Inchmartine, Inchture.

COCHIN-CHINAS (White).—First, A. Patterson, wright, Airdrie. Second, Mrs. Fergusson Blair, of Balthayock, Inchmartine, Inchture. Commended, J. Sharp, Johnstone.

BRAHMA POOTRAS.—First and Second, Mrs. Fergusson Blair, of Balthayock, Inchmartine, Inchture.

SPANISH.—First, J. F. Burnside, Mugdock, Strathblane. Second, H. Donald, engineer, Johnstone. Commended, J. Young, Condorrit, Cumbernauld.

HAMBURGHES (Golden).—First, A. L. M'Murtrie, innkeeper, Milngavie. Second, T. Caldwell, Coldstream, Beith. Commended, M. Buist, Tynninghame, East Lothian.

HAMBURGHES (Silver).—First, M. Buist, Tynninghame. Second, A. L. M'Murtrie, innkeeper, Milngavie. Commended, T. Caldwell, Coldstream, Beith.

POLANDS.—First, A. Ferguson, Stewarton. Second, J. Davie, Kirkshaws, Old Monkland.

GAME.—First, A. L. M'Murtrie, innkeeper, Milngavie. Second, J. Cunningham, West Arthurlie, Barrhead. Commended, A. Graham, Capellie, Barrhead.

ANY OTHER BREED.—First, R. Westbrook, Brookall, Paisley (old Scotch). Second, W. Paterson, East Kilbride (old Scotch). Commended, W. Gilmour, 127, St. Vincent Street, Glasgow (old Scotch).

BANTAMS.—First, G. Baillie, jun., Mellerstain, Kelso. Second, R. Aitken, Blantyre Works. Commended, J. G. T. Sinclair, Benmore.

DUCKS (White Aylesbury).—First, J. Young, Castle Glen, Busby. Second, A. Cunningham, Craigends, Johnstone. Commended, A. Young, Kirkton Mills, Neilston.

DUCKS (Rouen).—First, A. M'Murtrie, innkeeper, Milngavie. Second, G. Baillie, jun., Mellerstain. Commended, Miss Moffatt, Grassmarket, Edinburgh.

ANY OTHER BREED.—First, J. Pollock, West Morton, Mearns. Second, W. Gilmour, 127, St. Vincent Street, Glasgow.

TURKEYS (Black Norfolk).—Prize, T. Caldwell, Coldstream, Beith.

TURKEYS (any other breed).—Prize, Mrs. Fergusson Blair, Inchmartine, Inchture.

GEESE.—First, J. F. Burnside, Mugdock, Strathblane (Embsen). Second, G. Baillie, jun., Mellerstain, Kelso (Toulouse). Commended, T. Caldwell, Coldstream, Beith (White Embsen).

CLASS 7.—FRILLED PIGEONS.

VARIETY 3.—THE OWL PIGEON (*Columba bubo nominata*, MOORE).

Belgian.

German.

LES PIGEONS SMERLES.

LÜTTICHER BRIEF TRÄGER.

THE Owl Pigeon has long been held by English fanciers as a distinct variety from the Turbit, although to a casual observer there appears but little difference except in colour, namely, that while the Turbit is pied or white with dark or coloured shoulders, the Owl is whole-coloured, generally blue or silver. But if the properties of true-bred birds of each variety are compared other points of difference will be apparent, though to a certain extent the two varieties are very similar; and, as both breeds have been much neglected, the difference is not so great in the common run of birds bearing these names. Bearing in mind the points of a

Turbit which I described in my last chapter, I will endeavour to show their difference. The beak of the Owl is more hooked, the upper mandible bending over the lower, which, combined with their shy and wild nature and their prominent bolting eyes, has given rise to their English name of Owl Pigeon. The eye, too, is of a pearl or gravel colour, very different from the Turbit's, the head is rounder, and the frill rarely so long. The old writers describe it as opening and reflecting both ways like a rose, which could not be said of the Turbit's frill.

The points of the Owl may be enumerated as follows:—Beak short and hooked; head round; eye pearl-coloured and bolting; gullet well developed; frill rose-shaped; size small; general appearance wild; colour blue or silver, with black bars across the wings, and a light powdery cast of colour about the neck. I am not aware that this variety is known in France, though they have a white variety of Turbit, *Pigeon Cravate Blanc*. The Germans also have white and black Möven, but I am not sure which variety they belong to. In Belgium they are much used as Carrier Pigeons. *Les Pigeons Smerles, Court Becs de la province de Liege*, or, as the Germans say, *Die Lütticher brief Träger*, are of this variety, though perhaps not so highly bred, as they are bred there expressly for flying, for which their wild nature and excellent home qualities make them well suited. Those imported here are known as Short-faced Antwerp Carriers.

Although blue and silver are the chief and best colours for the Owl Pigeon, yet other colours, as white, black, or even yellow, are sometimes met with, and I have seen some recently in London white with black tails. It has been recommended that the breeding places for these birds should be private and secluded, as from their wild nature they are liable to be disturbed.—B. P. BRENT.

MERTHYR-TYDFIL POULTRY SHOW.

HELD on August 19th, 1857. We must reserve our remarks until next week. Mr. J. Baily, London, was Judge. Chickens and adult birds were classed together.

SPANISH.—First and Second, R. T. Crawshay, Esq. First, Mr. G. Warren. Second, R. Forman, Esq.

DORKINGS (White).—First, R. T. Crawshay, Esq. Second, R. Forman, Esq.

DORKINGS (Coloured).—First, R. T. Crawshay, Esq. Second, Mr. D. Williams. First and Second, R. Forman, Esq.

COCHIN-CHINAS (White).—Prize, R. Crawshay, Esq.

COCHIN-CHINAS (Cinnamon and Buff).—First and Second, R. T. Crawshay, Esq. Second, Mr. T. J. Evans. Second, Mr. D. Thomas.

COCHIN-CHINAS (Brown).—First, Mr. W. Kedart. Second, R. T. Crawshay, Esq.

HAMBURGHES (Gold-spangled).—First and Second, Mr. C. Smith. First, R. T. Crawshay, Esq. Second, Mr. D. Jones. Highly Commended, Mr. L. Williams.

HAMBURGHES (Gold-pencilled).—First, R. T. Crawshay, Esq. Second, Mr. J. T. Williams.

POLISH FOWLS (Black and White Crests).—Prize, R. T. Crawshay, Esq.

POLISH FOWLS (Gold).—Prize, R. T. Crawshay, Esq.

POLISH FOWLS (Silver).—Prize, Mr. J. T. Williams.

HAMBURGHES (Silver-spangled).—First and Second, R. T. Crawshay, Esq. First, Mr. C. Smith.

GAME FOWLS (Black-breasted).—First, R. T. Crawshay, Esq. First, Mr. L. Williams. Second, Mr. J. Williams.

MALAY.—Prize, R. T. Crawshay, Esq.

BANTAMS (White).—Prize, Mr. C. Smith.

BANTAMS (Black).—First, Mr. J. T. Williams. Second, Mr. G. Warren.

BANTAMS (any other variety).—First, R. T. Crawshay, Esq. Second, Miss B. Roope. First and Second, Miss G. Joseph.

GOLDEN PHEASANTS.—Prize, R. T. Crawshay, Esq.

MISCELLANEOUS.—First and Second, R. T. Crawshay, Esq. Second, Mr. E. W. Scale.

GEESE.—Prize, R. T. Crawshay, Esq.

DUCKS (White).—First, R. T. Crawshay, Esq. Second, Mr. F. Roope.

DUCKS (Muscovy).—Prize, R. T. Crawshay, Esq.

DUCKS (any other variety).—Prize, R. T. Crawshay, Esq.

TURKEYS.—Prize, R. T. Crawshay, Esq.

OUR LETTER BOX.

BRADFORD PRIZE-LIST.—“With the remarks made by ‘Mrs. COCHIN’ you seem wholly to coincide, and think the Bradford Committee wrong in having classed all varieties of Cochins and Brahmas together. This, at first sight, I must confess, seems an injustice to the Cochin race; but if you, if your curiosity lead you so far, would look through the catalogues of the various shows in our neighbourhood where they have been classed as you wish, you would find the number of entries, in comparison with other sorts, wonderfully small; in fact, in some cases being about as many pens as prizes. This being the case, and economy our motto to a reasonable extent, we thought it but fair to class them all, along with the Brahmas, together. If we are wrong in this (and we hope we are), we shall be glad to make an ample apology to ‘Mrs. COCHIN,’ and promise to treat her better another year.”—ONE OF THE COMMITTEE.

[We cannot coincide with you. At Sheffield and elsewhere in the north good prizes have brought, and always will bring, numerous exhibitors. If sufficiently tempting prizes cannot be afforded, some classes had better be omitted rather than to do injustice to them. No Judge can decide satisfactorily which is the best pen out of a mixture of Buff, Black, White, and Partridge-coloured Cochin-Chinas.—ED.]

SWISS, MOONED, OR HALF-MOON PIGEONS (*Columbus*).—These belong to the class of Toys: colour or marking is their only characteristic. They are usually of a very pale shade, many times nearly colourless, with a dark crescent or half-moon mark on the fore part of the chest, and frequently heavily feathered on the feet. Their origin is most likely the same as other Toys, an accidental peculiarly-marked Pigeon, and by careful breeding the marking has become permanent.—B. P. BRENT.

BARB PIGEONS (J. S.).—The characteristics of the variety of domestic Pigeons known in England as Barbs are a very short and thick beak, the shorter and thicker the better, with a small wattle on it; head broad, rather angular, and indented; eyes pearl, and surrounded by a broad circle of naked red flesh—the broader and redder it is the more the bird is esteemed; neck moderate, but thin towards the head; pinion feathers very long, which give the bird a rather lengthened appearance. For further particulars see COTTAGE GARDENER for October 28th, 1856, page 70, Vol. XVII.—B. P. B.

TURKEY LOST AT THE CRYSTAL PALACE (J. S.).—We cannot give an opinion without knowing all the facts.

BATH AND WEST OF ENGLAND POULTRY SHOW.—“It being now more than two months since that the Bath and West of England Society held their Poultry Show at Newton, and the prizes not yet being all paid, I wrote to the Secretary, Mr. J. Kingsbury, of Taunton, and also to the Secretary at Bath, Mr. Henry St. John Maule. The latter gentleman refers me to Mr. S. Pitman, of Taunton, the Director, to whom I wrote several days since, but up to the present time I have received no answer. Will you have the goodness to inform me to whom I should apply for the money due, as those gentlemen whom I have mentioned do not appear to take any interest in the Society's welfare?”—GEORGE CROCKER, 23, Queen Street, Plymouth.

[The Bath and West of England Society is too favourably known to justify any suspicion of shuffling on their part; but we advise the Society to see at once that the grievance complained of is immediately removed. Who will show in future at a Society's Exhibition that has to be coerced into payment of its prizes?—ED.]

SHEFFIELD POULTRY SHOW.—The Rev. G. Hustler, Appleton, near Tadcaster, took the second prize for adult *Dorkings*, and not the third prize, as stated in our report.

LONDON MARKETS.—AUGUST 24TH.

COVENT GARDEN.

An excellent supply of both Fruit and Vegetables, fully equal to suit the terms of all classes of buyers, which have been numerous during this real summer weather. Importations comprise *Greengages*, *Orleans* and *Precoce de Tours Plums*, *Endive*, *Artichokes*, and *Tomatoes*; and several cargoes of *West India Pines*, sometimes 40,000 a day, have changed hands at the brokers during the past fortnight, the season for which, however, will soon be over.

POULTRY.

We have little alteration to note. The supply of Grouse is very moderate, and the arrivals from Scotland are chiefly made up of old birds.

Large fowls	5s. 0d. to 5s. 6d. each.	Grouse	.... 3s. 0d. to 4s. 0d. each.
Smaller do.	3s. 6d. to 4s. 0d. „	Pigeons	..... 8d. to 9d. „
Chickens..	2s. 3d. to 2s. 6d. „	Rabbits ..	1s. 4d. to 1s. 5d. „
Geese	6s. 0d. to 6s. 6d. „	Wild ditto	..... 8d. to 9d. „
Ducks	3s. 0d. to 3s. 6d. „	Leverets...	3s. 0d. to 4s. 0d. „

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—August 25, 1857.

WEEKLY CALENDAR.

D M	D W	SEPTEMBER 1—7, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
1	TU	Chamomile (Anthemis).	29.842—29.787	72—44	S.W.	—	15 a. 5	44 a. 6	1 m 2	13	0 10	244
2	W	St. Barnaby's Thistle.	30.174—29.910	67—33	N.	01	16	43	2 24	14	0 29	245
3	TH	Field Marigold (Calendula).	30.255—30.207	73—37	N.W.	—	17	41	3 50	15	0 49	246
4	F	Autumn Star Grass.	30.196—30.095	75—34	S.E.	—	19	39	rises.	☺	1 8	247
5	S	Angelica (A. archangelica).	29.984—29.863	71—37	E.	—	21	37	7 a. 6	17	1 28	248
6	SUN	13 SUNDAY AFTER TRINITY.	29.742—29.597	70—42	E.	12	22	34	7 19	18	1 48	249
7	M	Snakeweeds (Polygonum).	29.866—29.738	72—38	S.W.	—	24	32	7 33	19	2 8	250

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 69.9°, and 47.7°, respectively. The greatest heat, 85°, occurred on the 1st, in 1843; and the lowest cold, 24°, on the 7th, in 1855. During the period 105 days were fine, and on 95 rain fell.

SEPTEMBER-SOWN SEEDS.

WE are going to sow very many different kinds of seeds in the Experimental Garden between the 1st and 10th of September; and the first seed we shall sow is new to the whole sowing world in the autumn—a very old plant for a new purpose. In the chronicles of the Experimental Garden for 1856 it is stated that if the seeds of the *Chinese Larkspur*, the richest ultramarine blue flower that we know of, are sown in pots any time in September, and the seedlings are treated like seedlings of herbaceous *Calceolarias*, or seedlings of *Fuchsias*, *Cinerarias*, *Pelargoniums*, and *Geraniums*, or like *Mignonette*, five of the seedlings may be put into 48-sized pots in March, one in the middle and four cross-corner-like round the sides, in strong loamy soil, mixed with very rotten dung. The plants will rise from twenty to thirty inches, and some to three feet, and bloom magnificently from the first week in May to the end of the second week in June in a grand conservatory, lobby, or corridor, in any kind of greenhouse, and in shop windows all the way from London to Liverpool, and round every other “pool” in the three kingdoms; and, moreover, that these flowers look about three times better in May than those of *Salvia patens* do indoors and in windows in September. This season we are going to experiment on the seeds of *Delphinium formosum* in the same way. Now, for gardeners who have the regular machinery at work here is a new colour, which they can use from the first, or at least from the middle, of April until that kind comes in the open ground. For cut flowers to send up to London in May it is one of the very best, as it travels well and keeps a long time in water. A correspondent mentions to-day that seedlings of *Delphinium formosum* from a sowing at the end of last February were throwing up their second crop of bloom last week. This would have been valuable information if the exact treatment of the seedlings had been given. It strikes me that some one will soon immortalise himself by discovering that all the hardy herbaceous plants which have strong fleshy roots will force as easily and in the same way as *Asparagus*; then these sowings out of season will come in aid of the grand discovery.

A sheltered border with an eastern aspect is the only available space with us to sow the autumn seeds on, but a western aspect is the best. All the kinds are intended by us to mix first with spring flowers, and next with bedding-out plants. We shall probably have a bed of mixed *Nemophilas*, the blue and *maculata*, and some rows of the pink *Silene pendula*; but all the rest will be planted out in patches in the spring, and in rows or circles between the bedding plants. To plant flower-beds thickly in May is madness, and to have a spare inch of ground when a bed is planted is folly. Country gardeners, whose “families” are in town, stand here between madness and folly without “catching” either; but those who stop at home and follow the example of the said gardeners are not free from folly at

least. But to be free from both there is nothing better than to have lots of seedling annuals in the spring in different parts of the garden to fly to for filling up completely. No gardener has ever used more of these annuals than I have done, or for such a long period, and I shall never cease to use them till I am dead and gone; and, were it not for the prejudice of a civilised age, I should like to be buried in a flower garden in which masses of annuals had been planted; but I protest against “sowing annuals” in spring, except two sections: one is of those which last to the end of the season, and the other a few very showy six-week things, to be sown in among other plants, never as beds by themselves, as is practised in a few very good gardens which I know. Looking at the seed-lists of annuals I can vouch for it very confidently that not one out of ten of them is worth a place anywhere. Out of all that ever were known I do not think that twenty kinds are worth growing for showiness, and ten kinds are more than I shall use this season.

Fifty plants of a good flowering plant when put together will give more effect when in bloom than fifty kinds of the best flowering plants in the world; and one kind of annual will have more effect in a planted “bedding” flower-bed than two, three, or more kinds. I have tried them in all ways, and studied the subject most attentively, and my last “bout” is that when you plant a bed of *Calceolarias*, *Verbenas*, or *Geraniums*, never use but one kind of make-up plant, and let the size and growth of it be as near as can be found to those of the plant with which the bed is permanently planted.

The place for autumn-sown annuals should not be dug deeply, but merely forked over a couple of inches deep, and the surface levelled and left rough. Then sow the seeds, and press down the surface with the head of the rake, or by walking over it, and after that rake it quite smooth and even. The reason for not digging the ground is to prevent the roots going deep, and so encourage too much growth, which would not stand the frost, and the treading is to keep the frost from throwing out the seedlings. After all these precautions cultivated seeds never throw up such healthy plants as self-sown seeds, unless the surface is very hard or spongy. The only two annuals which do well on very damp, spongy ground, and particularly on boggy peat, are the *Collinsia grandiflora* and *Eutoca viscida*. They are of no use except from an autumn sowing, but are the best of them all to sow round American beds or among Azaleas, and do better without being transplanted. From 1852 to 1855 I had splendid masses of *Eutoca viscida* all through May on a large bed of Ghent Azaleas, but *Collinsia bicolor* always comes best from being transplanted.

All the *China Asters* will come in a month earlier from being sown in the autumn; and I never knew the frost to destroy more of them than of other annuals. Another sowing of them in the open border by the middle of April, and a third about the 10th of May,

will save all the bother of raising them on hotbeds; but the white and purple *Clarkias*; the blue, the white, and the spotted *Nemophilas*; the *Collinsia bicolor*, *Gilia tricolor*, and *Limnanthes Douglasii* are the hardiest and showiest, except *Douglasii*. The *Godetia Lindleyana* and *rubicunda* are also very beautiful when well done, but to do them thoroughly they ought to be twice transplanted; first any time in February, and secondly at the end of April. If they are put among bedding plants, or earlier if on mixed borders, as they grow tall—from fifteen to twenty inches under this treatment—they should occupy the middle of the beds. The *Limnanthes* ought also to be twice transplanted, as it is apt to trail too much on good ground. A row of it formed of single self-sown seedlings, and transplanted on a new border before Christmas in the Experimental, extended two feet six inches, and would have made a full yard of it were it not clipped next to the walk. White and purple Candytufts are well suited for Geranium beds to come in between the rows. The deep purple Candytuft, which they call *New Scarlet*, does not come true from seed. We pulled up all the pale purple last year, and flowered none but the very best purple, from which we have barely five per cent. of good colour.

Eutoca multiflora and *Whitlavia grandiflora*, a brother and sister, and nearly blue, do better in peat beds unless it is a drenching May—they cannot stand drought. The white and red *Virginian Stocks* are the first to bloom in spring from early September sowing; and the *Sweet Alyssum* is best from an autumn sowing. The blue *Branching Larkspur* and the yellow *Erysimum Perofskianum* do well trained flat, and last longer than the *Clarkias*.

Callichroa platyglossa and *Bartonia aurea* are the next best yellows, but the *Bartonia* should be planted when very young; and the last is about as good as the first—the sky-blue Corn-flower, *Centaurea cyanea*. Always sow a pinch of it in September, and another about the middle of April: it is one of the best cut flowers we have. All the duchesses are quite as fond of it as school girls. I do not recollect any more worth naming, but if one had room to stow away under glass a lot of autumn-sown annuals, that would be the way to have gay flower-beds in May, with herbaceous *Calceolarias*, *Schizanthuses*, and a few others of the half-hardy kinds.

D. BEATON.

CRYSTAL PALACE FLOWER SHOW.

At this Exhibition, on the 9th, 10th, and 11th instant, gardeners will each be admitted on the *first* day of the Show for two shillings, and on the other two days for one shilling each.

ONE YEAR'S SEEDS, SEVEN YEARS' WEEDS.

THOSE readers of THE COTTAGE GARDENER who have paid attention to what may be called the economics of gardening will be aware that the heading of these remarks is as old as the hills. That seeds rob the crops existing or to come surely no sane person will doubt; that they are, therefore, expensive intruders is equally certain. Now, as to their being robbers of the present crop we will take it for granted; but do people calculate with sufficient caution their reversionary character, to use a law phrase?

As to their present effects I will venture to affirm that a crop of weeds amongst general field or garden crops, if allowed to rise to nearly their full stature, will deduct twenty per cent. of value, taking their conjoint effects on the present crop, and the abstracted qualities of the soil as to the future. But to come to the vitality of seeds, there is not a single person in Europe who

can determine with precision how long each kind of weed will endure: the majority of scientific men, however, are agreed to impute a much longer amount of endurance to them than casual observers are apt to do. We have all heard of certain oily seeds, such as those of plants belonging to the cruciferous order, which are said to last in the soil, under certain conditions, for nearly a century.

About the celebrated mummy seeds I will say but little, as I fear many of the so-called facts stated in connection with them may stand on disputable ground; but that one year's seeding of this kind, such as Charlock, will entail a vast amount of subsequent labour there can be no doubt. But then, again, we have the disorderly appearance attached to a weedy garden or farm. In such cases either the plans are bad, or there is a deficiency of labour, or both. Now, most persons who cultivate a garden set out in the spring with a determination to clean the garden, and to keep it clean afterwards; but not one in half a dozen, perhaps, sustains that determination, but allows what may be termed the July weeds to obtain and preserve a footing until the usual period of cleaning in autumn, when, of course, another bold dash is made at the weeds, in order to appear decent through the succeeding winter. But how pitiful a policy is this! What is thus done appears to be more for the sake of appearance than on principle. By this period the whole garden is once more filled with seeds to strangle ensuing crops. In all this there is not only a considerable loss constantly going on as to the value of the crops, but also as to the labour question, for much labour is thrown away in their extirpation; and if none extra is employed it is evident that other departments must suffer in consequence.

To say little for the present about our pleasure grounds, who will say that a clean, systematic, and well-stocked kitchen garden is an unimportant adjunct of a homestead? In my opinion there is no part of a garden which possesses more interest than a kitchen garden well conducted.

Now, there are various ways of attacking weeds, and three of the most prominent may be here adverted to—by the spade, the hoe, and the hand. In early spring the necessity for a liberal use of the spade causes of itself the garden to assume a tidy appearance in general. No sooner, however, are the spring crops fairly in than these enemies lift up their heads, and the hoe is presently called into requisition. This proceeding generally occurs during dry periods, for which May and part of June are in general notorious, and at that period the rising crops demand the use of this implement. Towards July we expect a considerable amount of rain, such, frequently, as our Cheshire farmers term a "dumberdash," and this has a tendency to bathe the ground, and to cause weeds to grow and spread like wildfire, the warmth of that period acting in conjunction to produce those sudden effects which are ascribed to certain tropical climes.

In many cases where there has been neglect the hoe becomes inefficient to the end in view, and good gardeners, who can raise manual labour enough without compromising various other matters, not unfrequently betake themselves to the spade.

The spade is, indeed, of immense value, as compared with the hoe, under trying circumstances; but I am sorry to say that, from such a general desire to cramp the labour account, not many can carry out what they desire. Scarcely twenty per cent. of really good first-class English gardeners can carry out one-half their views, so that the neglect and miscarriage which occur in the hands of first-rate men are seldom for want of knowledge. Indeed, if we look over the world, where is the class of gardeners to be found that equals those to be found in Britain? I wish I could here impress on

the minds of those ladies and gentlemen who, with a constant desire to widen the objects of their gratification, insist on a given amount of labour, whatever the period or the emergencies, the propriety of allowing their gardener, if he is really one, the power to call in extra assistance when circumstances require it. It is even in gardening as in matters of warfare: one regiment, in the latter case, may sustain and enforce the public welfare in one year, but two may be required the next. Our great Duke, now gathered to his fathers, had a decided objection to a little war; and really, little gardening is a pitiful thing providing the emergency is great.

I again, however, recommend strongly the use of the spade in July and August when weeds have become masters. In this case it must be remembered that, where garden crops are for the most part in drills running north and south, as they should be, and sufficient room is allowed between the drills for culture, the spade performs a kind of summer fallow. But more may be said on this head. Who can determine the number of depredatory insects or their eggs that are destroyed by such a course of burying? That it is of a more extensive character than is commonly imagined I am thoroughly persuaded, and in this respect our agriculturists may, if they please, take a hint: what holds good in the garden as to general principles is mostly equally valid in the farm. And shall we not leave a margin for the destruction of numerous fungi also? Doubtless we may.

R. ERRINGTON.

SHORT CULTURAL NOTES FOR WINDOW GARDENERS.

(Continued from page 327.)

NEMOPHILA INSIGNIS.—If this beautiful blue annual is sown in poor sandy soil in September out of doors it may be potted in March, and will form a fine feature in the window in April and May; if in pots in winter it must be kept cool and rather dry. In spring and summer, though requiring plenty of water, the collar of the plant should be dry. Placed in a neat basket and suspended few things are more beautiful in the spring and early summer months.

ORANGE (*Citrus aurantium*).—I am induced to notice this from seeing some nice plants of wild Orange, the *Otaheite* and the *Mandarin*, in a small farmer's window. The young lasses sowed the seeds of the common Orange, and got so many plants they did not know what to do with them; but they were assisted in grafting several with the kinds mentioned above, keeping them until they had taken in their brother's Cucumber frame, and proud they are of them now. They are grown in rich sandy loam, have plenty of air after April, and in June on to the end of September have a sheltered, somewhat shady, though not a sunless spot out of doors. In the intermediate months they stand in the windows of a large living room, and are generally well supplied with bloom in spring, especially the *Otaheite*. The leaves are sponged several times in winter.

ORNITHOGALUM.—It would be next to impossible to make a selection of these pretty Stars of Bethlehem, they are all such pretty small bulbs. Fibry, sandy loam with a little heath soil will grow them well. They want plenty of water when growing and blooming, and none at all when the leaves have turned yellow.

OXALIS BOWIEL.—Many of these have been incidentally mentioned. Perhaps none is more interesting than *Bowiei*, with its large crimson flowers and fine green foliage, the flower-stalks rising, when supported, from a foot and upwards. When treated as a window plant it will bloom best in the late summer and autumn months. As soon as the flowering is over lessen water, but give a little so long as the leaves remain green. When yellowish refrain altogether, and place the pots where they will be dry and free from frost until they begin to shoot next spring; then remove a portion of the surface soil, water, top dress with rich sandy loam and heath soil, and place the plants in the light, either in

the window or in a cold pit, until they come into bloom. Water will be needed frequently as they require it, and plentifully when in bloom. In potting afresh place from eight to twelve strong bulbs, about three inches or so from the surface, in a six or eight-inch pot.

PASSIFLORA CÆRULEA.—This is one of the hardiest of the Passion-flowers, and as far north as the midland counties we have seen it festoon the outside of a window by being planted in the border or balcony outside. I have also seen it grow in a box inside, and part of the stems taken out in summer, when it flourished both outside and inside. Fibry loam and sandy peat grow it well. It wants little water in winter, but abundance in summer. When once established it should be pruned close back to within a bud or two of the main stem or stems every winter, as it blooms on the shoots from these buds of the current year.

PELARGONIUM.—Under this head I include the whole group of Geraniums generally cultivated in windows, and, to be as clear and concise as possible, will separate them into several groups, merely premising that the whole may be raised from cuttings from the end of March to the end of August. New varieties of all kinds may also be raised from seed sown in pans as soon as ripe, or, as saving room in winter to window gardeners, kept dry over the winter, sown in March or April, and be near the fireplace until up; then placed in the light, pricked off, put separately into small pots, and grown there until they bloom, as the smaller the pot, other things being equal, the sooner will the seedling bloom; and then you can give it more room if you think it worth it.

1. *Scarlet Geraniums.*—Propagate at any time from spring to autumn indoors. In July and August they will strike freely out of doors, either planted in sandy soil in a border, placed in boxes, or separately, each cutting in a small pot. When thus treated do not drench with water, but syringe frequently after hot days, and do not fret if the point of the cutting hangs its head a little. Leave but a few small leaves, and this lessens the evaporating surface. The succulence of the cutting will enable it to absorb a little moisture as well as perspire it. All these cuttings must be kept from frost, have a fair portion of light, and a sufficiency of fresh air and water during the winter. The cuttings may range from two inches and a half to three inches and a half in length, and stubby side-shoots are the best. These will bloom strongly and freely next season, but in general not nearly so freely as plants ranging from one to six or more years of age, and which will stand much rougher treatment in winter. I have had pots and boxes of scarlets never shifted for many years, and thus they were treated. About October, though kept full in the sun, little or no water was given them. In November or the end of October every leaf was stripped off, and the plants were placed in a shed or loft where frost could not get at them, a little dry hay, or anything of that sort, being placed over them as occasion required. About the middle of March they would begin to bud, when they must have more light, and as they progressed a little water. Then the surface soil was removed, and fresh rich loam as a top dressing substituted. Before the leaves got large the plants were placed in the window, or under a similarly favourable position, and indoors or out of doors they were a mass of bloom from June onwards. A little pruning, removing dead flowers and leaves, plenty of water, and manure water at times, kept them on thus until October, when they were prepared again for their winter quarters.

2. The Nosegay section of scarlets may be similarly treated, only they will not bear being so dry in winter, nor yet kept in a dark position so long.

3. The large florist Pelargoniums may be treated the same as respects propagating, &c., in July and August, saving much trouble; but neither young plants nor old plants can endure dryness or darkness in winter. Old plants can only be kept nice by an annual pruning back, which should take place when the plants have done flowering, and have stood out of doors some weeks to harden the stems, and little or no more water given than will just keep the leaves from flagging. You must then cut back the young shoots freely according to the form you wish your plants ultimately to assume. Cuttings of the well-ripened stems farthest removed from the flowering

piece will make the best plants. These should be about three inches long, cut across at a joint, with two or three joints above, and inserted from half an inch to one inch in the soil. It matters not whether there are leaves above or not if there are buds at these joints. Of course each of these joints with a bud would form a plant; but this is an extra productiveness that window gardeners need not often strive after. When the plants are thus cut down do not keep them dry, but dryish, for a week or so, when they may be watered. If in a pit or any convenience of that sort I should prefer watering the bottom on which they stood for a fortnight to watering the pots. When the young shoots are about an inch long reshift the plants into clean similar-sized or even a smaller-sized pot, using fibry, sandy loam and a little leaf mould, just nipping off the points of any straggling or decayed roots. Water, and keep close and shaded from bright sun until the roots are working freely in the fresh soil. If transferred to a smaller pot they may need a larger one about February. Such plants, if the shoots come regularly, should not be stopped, and they will bloom in June. Other plants, younger, repotted later, or whose shoots were stopped, will bloom later. Bear in mind that the smaller the pot, the better and finer the flowers will be in proportion, though entailing more care as respects watering.

4. Fancy kinds may be treated much the same, only they should not be pruned in quite so much when the flowering is over. They should not then, nor afterwards before they break, be kept so dry as the more succulent, strong-growing kinds. They should have smaller pots in proportion, and a little heath soil in the compost; and the cuttings even in July and August would do best under a shaded handlight. The best plants are made from little side-shoots taken off in March and April, struck inside the window, sheltered by a paper funnel or a shaded bellglass, and potted once or twice during the summer. These and the large florist *Pelargoniums* will bloom well and early the following season, though not so freely as plants a year or two older.

5. Some continuous bloomers, if supplied with the necessary amount of light, heat, and water, as the sweet *Prince of Orange*, *Citriodora*, the free-flowering *Floribunda*, and the beautiful *Uniques*, of which *Rollisson's Purple* and *Gaines's Scarlet* are the best, may be treated much in the same way, and are great ornaments of the window, only all propagation should, if possible, with window gardeners, take place from March to June: not only will the cuttings strike better, but nice little plants will be secured before winter. Be it observed that none of these, except old established scarlet *Geraniums*, can do without light and the necessary attentions as to air and water in winter. Old scarlets will do very well if the temperature is dryish, and not below 33° for any length of time; all the others should seldom be below 40°, and the finer Fancies, the Sweet-scented, and *Uniques* will like it to range from that to 45°. During winter, if the fire dries the atmosphere of the room, syringe and moisten the foliage in the forenoon, but avoid very cold direct frosty draughts.

PENTSTEMON GENTIANOIDES and its varieties are more fit for the balcony than the inside of a window. Seeds reproduce their varieties pretty truly, and plants are easily raised from cuttings in spring and autumn. Any cool, dampish place free from frost, and having access to light and air, will keep them safely over the winter. Common soil, if not too adhesive, will suit them.

PETUNIA.—Most of the purple and light varieties come pretty truly from seed. Flowering plants for summer from cuttings should be struck in April. Plants to stand thickly over the winter should be rooted in August and September. Firm side-shoots from one inch and a half to two inches in length make the best cuttings. They should be inserted in sandy soil, and covered with a bellglass or square of glass shaded, or be placed under a glass frame, close and shaded during the day, and with air left on at night. Rich, fibry, sandy loam suits all of them well. They are more fitted for the flower garden and balcony than the window.

PLUMBAGO CAPENSIS.—A beautiful blue flower, blooming freely when in a young state. When flowering and growing give water freely; give less in autumn to ripen the buds; prune back to within a bud or two of the older shoot in autumn. Give little water, but a fair portion of light and air, and freedom from frost in winter, and increase the water

as the young shoots come away in spring. Sandy, fibry loam, with a little leaf mould or heath soil, will suit it.

POLYANTHUSES and *COMMON PRIMROSES* for windows treat as recommended for *Auriculas*, though requiring less attention.

PRIMULA CHINENSIS (Chinese Primrose).—Sow if possible under a square of glass in April or May, keep shaded until the plants are fairly up, prick off, and water; then pot and repot separately, and by July keep the plants on a dry bottom, and in a position out of doors shaded from direct sunshine until it is time to house them in winter, when the nearer they are to the light and the glass the better will they bloom, and the more bright will the blooms be. Rich, fibry, sandy loam, with a little leaf mould and good drainage, will grow them well. When seeding give less water, and sow as soon as ripe. Young plants of this year, deprived of all their old withered leaves, and which have been kept in smallish pots, will, on being properly shifted and attended to with watering and shading, bloom early and very freely the following year.

RANUNCULUS, of the Turban and other florist kinds, if potted in fibry, sandy loam in October and November, will bloom freely in the windows in spring. Keep the pots in a cool, dark place until the plants appear, when they must be moved into light and kept from frost.

ROSES.—The Chinese varieties are the best for windows, though *Bourbons*, *Teas*, and *Perpetuals* answer very well. The small fairy *Roses* answer extremely well, as taking up but little room, and they and the Chinese bloom very early and very late, if not even through the winter. For the latter purpose the plants should be pruned pretty freely after Midsummer. Cuttings strike freely from spring to autumn, and all flourish in rich loamy soil well drained. When done blooming plunge the pots into an open medium out of doors, water well in summer, and keep rather dry and free from severe frosts in winter.

SALPIGLOSSIS.—The varieties are endless, but if kept separately they reproduce themselves, as to colour, pretty accurately. Sow in April under a square of glass in the window; prick and pot as soon as practicable, and you will obtain very pretty plants for the outside of the window after June, or for boxes on the balcony or beds in the flower garden. Any light fresh soil will grow them well.

SALVIA.—We have seen many species flourishing in windows. Perhaps the best two are the variegated-leaved variety of scarlet *Salvia fulgens* and the blue *Salvia patens*. The first is easily raised from cuttings in spring and summer, and if topped and potted will make a fine neighbour to *Chrysanthemums* in the first months of winter. Plants of that age when done flowering may be freely cut back, kept from frost, and turned out of doors after the middle of May, and if pinched back in summer, and supplied with water and pot room, will make a nice flowering specimen by September and October. The *patens* may also be raised from cuttings, but does better from seeds sown under a pane of glass in April, pricked off, and potted, when they will bloom all the summer. It forms a bunch of tubers, which, if kept dry and from frost in winter, will bloom freely the following season, but tubers much older are not to be depended on so well as seedlings. We have no blue equal to it, unless it is some of the new *Delphiniums*, as *formosum* and *Hendersonii*.

SAXIFRAGA SARMENTOSA.—Pot in rough fibry loam, with a little peat and sand in it. When a fair size incase it with its saucer in a little basket, suspend it from the top of the window, and allow the young runners to dangle from it for several generations, or as many as you like. Each of these little runners will form a plant. Just keep it from frost.

R. FISH.

TREES, SHRUBS, AND FLOWERS FOR TOWN GARDENS.

(Continued from page 327.)

IN a paper lately published in *THE COTTAGE GARDENER* I condemned trees as screens. That paper had reference more particularly to gardens at a distance from manufacturing towns. In gardens near or in

towns anything that will grow is acceptable. Hence I am compelled, as it were, to write against my published opinion that *trees should never be planted amongst shrubs, especially evergreens*, when intended merely as screens.

In my last paper on the subject of which this is a continuation I promised to give a list of those things which would thrive, or at least exist, in such situations, believing that this information would be useful.

I may just mention here that I find the churchyards of Sheffield very deficient of trees; indeed, some of them, the venerable parish church included, have not a tree or a shrub growing within their precincts. The solemn shade of old trees adds, in my view, greatly to that pious frame of mind which all right-thinking men try to acquire on entering the sacred place devoted to the service of that Omniscient Being whose presence and attributes are so much above our comprehension. To remedy this, in my opinion, great defect, I wrote a short paper on the subject, and sent it to the editor of one of the local papers, recommending a certain species of tree that would live and thrive in churchyards so situated. I met our worthy and revered vicar (Dr. Sales) a few days after the publication of my trifle, and had the pleasure to receive his thanks for my attention on the subject. I mention this little anecdote to show that the public estimate such information as I am about to give very much. No doubt many trees, shrubs, and flowers that I have not noticed may have been observed growing in similar situations by others, thriving in spite of dust, smoke, and close air; and I invite such observers to send their notes to the Editor, who will, I am sure, be glad to record such useful information. I now proceed with my list, commencing first with

TREES THAT WILL LIVE IN OR NEAR SMOKY TOWNS.

Acer palmata (Hand-leaved Sycamore).—Handsome foliage and branches.

Carpinus (the Hornbeam).—I have seen this close-twigged, bushy-growing tree in such a situation a considerable size.

Crataegus (the Thorn).—Several varieties of Thorns will live in the neighbourhood of towns, provided the soil is dry and deep.

Cytisus (the Laburnum).—This half-shrubby tree I have seen growing well in the heart of such towns as Nottingham and Northampton, and can recommend it in consequence.

Platanus occidentalis (the Western Plane tree).—Of all trees I know this is the very best for planting near cities, towns, or in churchyards. I have seen very large trees in such situations. This is the tree I recommended to give shade and shelter to the churches of Sheffield.

Populus.—Some Poplars thrive in a middling way in towns. The best that I have seen so growing is the Balsam Poplar (*Populus balsamifera*).

Sambucus (the Elder).—This is scarcely a tree, but it has the quality of being very hardy in all places. Hence I say, plant it where nothing else will grow.

Tilia (the Lime).—At a small distance from the town the Lime may be planted. It loves a dry, deep soil.

SHRUBS.

Aucuba Japonica (the Golden-spotted Japan Laurel).—This evergreen shrub seems almost created to bear the smoke with impunity. Where the common Laurel, Box, and others languish and die, this hardy eastern plant flourishes well. However, mind this—hardy though it is, it will not bear the strong currents near high buildings.

Berberis aquifolia.—A well-known evergreen dwarf shrub, with early yellow flowers, succeeded by purple

berries. Very handsome shining foliage. I saw several plants of it in the churchyard at Rotherham in the very midst of smoke from blast furnaces.

Buxus (Box tree).—Well known as a perfectly hardy evergreen.

Ilex (the Holly).—I observe this shrub thriving very fairly in such situations, providing a deep, good, dry loam was present. Hodgson's variety seems particularly suitable.

Ruscus aculeatus.—Not very handsome, but bears smoke well.

In addition to the above I would recommend the common Lilac, Syringa, and Snowberry shrubs, that will live almost anywhere, providing care is taken to thin their branches out and destroy the suckers annually.

FLOWERS.

The list of flowers that will live in or near large smoky towns is, of necessity, but scanty. In general early flowers do the best, because their foliage has so short an existence that they do not suffer so much as others whose foliage is more persistent. To keep them as healthy as possible under such an unfavourable position let the syringe and the rose water-pot be in constant use during the growing months.

<i>Anemone Japonica.</i>	<i>Hemerocallis flava.</i>
„ <i>vernalis.</i>	„ <i>fulva.</i>
<i>Anthericum liliastrum.</i>	<i>Hieracium aurantiacum.</i>
<i>Arum Italicum.</i>	<i>Hypericum elegans.</i>
<i>Aster</i> , several varieties.	<i>Iris</i> , many varieties.
<i>Astrantia major.</i>	<i>Ononis rotundifolius.</i>
<i>Betonica grandiflora.</i>	<i>Orobus vernus.</i>
<i>Caltha palustris flore-pleno.</i>	<i>Pulmonaria officinalis.</i>
<i>Campanula glomerata.</i>	<i>Saxifraga.</i> I have found
<i>Centaurea montana.</i>	many species of Saxifrage
„ <i>macrophylla.</i>	bear smoke well. I re-
„ <i>macrocephala.</i>	member seeing several
<i>Clematis erecta.</i>	large patches in the very
<i>Dielytra formosa.</i>	centre of Leeds, one of
<i>Doronicum Caucasicum.</i>	the smokiest of towns.
<i>Erigeron Villarsii.</i>	<i>Solidago minuta.</i>
<i>Ficaria ranunculoides flore-</i>	<i>Trollius Asiaticus.</i>
<i>pleno.</i>	<i>Veratrum nigrum</i> , fine foliage.
<i>Helianthus multiflorus.</i>	<i>Vinca major</i> and minor.

T. APPLEBY.

GARDEN SEEDS AND THEIR GERMINATION.

THE vitality of seeds, when placed under peculiar circumstances, has attracted much attention of late, besides which an alarm has been raised that the seed trade is no more exempt from corrupt practices than others are wherein great competition exists; in fact, some have affirmed that quantities of seeds of the most common of the Cabbage families are systematically killed by being subjected to some chemical agency or heat, which destroys their vitality without altering their appearance, for the express purpose of mixing with seeds of a similar shape, but of a more costly description.

Without vindicating the practices of the wily and dishonest tradesman who so acts, I cannot but think that the public at large are also to blame in the matter. The insatiable desire to have everything cheap has naturally led to this practice. Customers who will insist on having their purchases at a price below the cost of production must expect, in some way or other, to be victimised; and as bad seeds, unlike adulterated flour or coffee, do not entail on the vendor any serious charge of fraud, the matter is seldom heard of in any other way than by the grumbling of the sufferer; and, although the tests for seeds are as common and simple as anything else in existence, it is seldom that any further notice is taken.

Again, it is unfair to throw the whole blame on the vendor, for, apart from the penny-wise policy which induces people to flock to the cheapest markets, seeds of various kinds are subject to so many mishaps that the bad quality of the seeds alone is not the only source from whence the loss of a crop is to be attributed. The seed is liable to be destroyed by many enemies after it is sown. Birds of various kinds prey on it to a great extent, while mice and the numerous tribes of insects prey on the half-germinated seeds with an impunity not always understood or duly allowed for.

Let us, for instance, notice the seeds of the Cabbage family. Birds are especially fond of them, and are often seen hunting for them in newly-made-up beds. Where they are observed so doing it would be advisable to sow more seed, and to take some means, by using scarecrows or other contrivances, to keep them away, as well as sowing wood ashes over the bed, which render the seed distasteful. This substance, as well as lime and soot, is also a useful preventive to the Turnip fly, an insect which greedily devours the young plant wholesale when in the seed-leaf. This insidious enemy, however, allows the plants to show themselves before it attacks them; but their sudden disappearance tells, in unmistakable terms, the havoc it is capable of doing. Other insects attack the seed while in the ground; but the worst, perhaps, is the fly.

Although the seed of this extensive family has a tough husk, capable of resisting a great deal of hardship, it certainly does not retain its vitality so long as some seeds apparently less protected. It would appear that the oily substance of which it is in a measure charged evaporates, or is otherwise lost, and the vitality of the plant is gone. Such seeds as those of the cereals keep much longer, and many very small seeds keep a long time, the criterion of their keeping qualities resting in a measure upon the small quantity of oily or fermenting matters which they contain. Though many hardy plants present a more vigorous aspect than tender ones the vitality of the seed is equally liable to mishaps, and it is quite as often in an imperfect state as the other.

Even some of our native plants do not in all cases produce good seeds, there being as many uncertainties hanging over the chances of a piece of grass seed coming up well as against a seed pan of some tropical plant, grass seed especially being an uncertain crop in many of the places where it is sown, while wheat and most of the other all-important crops emanating from a temperate climate are almost certain to produce a crop under ordinary circumstances. Nevertheless, as the quality of seeds is of the greatest consequence to those concerned in the sowing of them, it would be well to test them all before sowing, which can easily be done by those having any heated structure at work, in which small pots containing a given number, say fifty of a fair sample of each kind of seed, be sown. The quickness and vigour with which these things germinate will decide that portion of the seed to be good, while the later and more weakly brood will most likely denote the old or imperfectly matured seed; but the less the deficiency, of course, the better the sample of seed. In Turnip seed the loss ought not to be more than five per cent., and I have even seen it less; but any way under ten per cent. is not bad.

In sowing seeds regard must be paid to the season, the nature of the soil, and other particulars. In general it is best to sow all seeds that are committed to the ground after the middle of April in soil that has been rendered very fine and mellow; and if it should be dry the portion immediately in contact with the seed should be made rather firm than otherwise, in order to prevent the dry air penetrating too deeply into the ground to the injury of the germinating plant. But more early in the season an opener or rougher surface is

to be preferred, the danger then being that the heavy rains of spring might harden and cake the ground, to the great injury of the rising crop. In fact, during the winter and early spring months the rake is but little wanted in the way of dressing ground; but in the summer, or in very dry weather in spring, it is prudent in all cases to have a raked surface to all seed-beds which the sun is expected to play much upon. At the same time let it be observed that where the ravages of slugs are to be feared, or the attacks of the Turnip fly to be guarded against, it is better to tread the ground firmly, and even beat the surface quite flat with a spade or other tool, so as to leave no shelter for these vermin to retire into; and although the ground may not derive so much benefit from the fertilising effects of the weather, the crop will in all likelihood be in a better condition to resist the attacks of the vermin to which it is exposed.

Various attempts have been made to partially germinate some seeds before committing them to the ground, but usually it has not answered. Certainly Peas and Dwarf Kidney Beans may be soaked in cold water a few hours before sowing in dry Midsummer weather, but the ground must also be watered as well in which they are sown. Small seeds at that period had better be shaded where convenient; and such as lie long in the ground, as Celery, Parsley, &c., ought to be sown earlier than when wanted, where the necessary amount of shading and watering cannot be given. At all events crops requiring but a small space to germinate upon may be humoured and coaxed into growth without any great amount of labour where water is handy; but by all means let them be shaded afterwards, otherwise it is questionable if the evil of watering is not greater than the good it does.

It has been so often explained that most seeds require an amount of covering, some four or five times their thickness. In winter and in damp places a less covering would do, only leaving seeds on the surface is very tempting to birds, &c., that it is prudent in all cases to throw a little earth over them, and if they are raked over let them be done so carefully as not to remove the seed. When the ground is rough it is good practice, in sowing small beds, to bring a little fine earth from somewhere else in which to deposit the seed, and being covered up with the same, the better will be the prospects of success.

J. ROBSON.

NOTES FROM THE CONTINENT.—No. 9. POTSDAM.

ONE of the pleasantest excursions from Berlin is that to Potsdam, "the town of palaces." It lies about fifteen English miles from Berlin, upon the line of railway connecting that place with the western German states, Belgium, and France. It is astonishing to see how soon the appearance of the country begins to improve as the train whirls us along. Before we proceed many miles it begins to swell up into low sand-banks and ridges, and further on into hills, until the landscape becomes really beautiful. The appearance of the crops also improves in an equal degree: the rye, which is so dwarf and thin near Berlin, is very much finer as we approach Potsdam. Wheat is not at all cultivated near here. The banks of the railway cuttings have been made into terraces, and planted with Apple and other fruit trees, which are tolerably productive. There are many young Vines, also, upon the banks facing southward, but they seem to have been recently planted, and no opinion can as yet be expressed as to the result of the experiment. The railway embankments upon some of the English lines are planted with ornamental trees and shrubs, and I have often thought, while travelling there, that they might, in the neighbourhood of large towns, be made useful without destroying their beauty. This is an idea worth thinking of, as cheap fruit and vegetables are a great blessing to the poor townspeople, who usually have no gardens of their own. The hay is all

cut here, the crop having been very thin, except where the ground is very wet by the side of the river, and then it was rank and sedgy. The common Acacia (*Robinia pseudo-acacia*) is generally used for forming hedges where they exist at all, and it is found to succeed well and grow quickly on ground which is too poor and light for hedges of White-thorn. As we proceed the train carries us through the outskirts of the Grunewald, a great forest, which is used as a royal hunting ground in winter. It is of vast size, extending from here to Charlottenburg. This part is occupied by Birch and Fir trees intermixed, which produce a very pretty effect at all seasons of the year, the white stems of the one contrasting with the sombre foliage of the other.

About three quarters of an hour's walk from Potsdam is Gleincke, the residence of Prince Karl, the brother of the king. It is a pleasant walk under an avenue of very fine old Lime trees, now covered with flowers, which perfume the air, and among which we hear "the murmuring of innumerable bees." There is nothing worthy of remark in the greenhouses of this place, and the flower garden contains nothing particularly good except some beds of foliage plants, such as Cinnas, Caladiums, &c., of which I must speak at greater length on some future occasion. The park is very beautiful, and quite as good as the average of English parks, although the necessary absence of many Conifers and evergreen shrubs is a point to be continually regretted. The lawns are in good condition, but at the expense of daily watering. The grounds abound in relics of ancient Greek and Roman art, sometimes arranged as ruins, at others as single columns or statues, around which, with the taste that was prevalent in England a hundred years ago, there are dogs, foxes, stags, &c., cut from living Box, which require clipping into form every few weeks, entailing labour which might profitably be expended upon other parts of the garden. The park is beautifully undulating, and affords from many points a splendid view over the town, the surrounding hills, the other palaces, and the mingled waters of the Spree and Havel, which here spread out into large lakes, furnishing a delightful item in the landscape. The water is so clear that we can distinctly see the shoals of fish with which it abounds.

Every person interested in new plants, and particularly those who formed the acquaintance of Mr. Wendland, from Hanover, during his several visits to England, and who afterwards heard of his being despatched on a botanical mission to Central America, will be glad to hear that there are letters from him published in the horticultural magazines of Germany. They state that he has safely arrived in Guatemala, that he was in good health, had every prospect of success before him, and had, indeed, already found some good things, although he does not specify what.—KARL.

WINDOW GARDENING FOR AUTUMN.

I WILL suppose the autumn to extend from the middle of August to the beginning of November. I can add nothing particular to the general directions given at page 115, and but little to the lists given at page 130. Most of the plants mentioned will continue in bloom until the nights become cold, and longer when fire heat is supplied to the room.

Fuchsias struck early in spring, scarlet *Geraniums*, *Nosegay Geraniums*, and those of the *Crimson Unique*, *Sidonia*, and *Diadematum* group, along with *Balsams* and *Salvias*, blue and scarlet, would make any window gay. Small plants of *Cassia corymbosa* would give a bright orange, and yellow *Calceolarias* of the shrubby kinds, topped back in spring and early summer, and kept in a cool place, would give a nice mass of yellow. Blue hangers from vases could be supplied by the old *Lobelia speciosa*, the best of all for this purpose. To these may be added the *Mesembryanthemums* mentioned at page 130, and *Oxalis Bowiei*, *cruenta*, and *purpurea*.

The culture to be thought of is—

1. To harden and ripen the wood of all plants that have passed their beauty, such as *Pelargoniums*, *Fuchsias*, &c., by placing them as much in the sun as possible, and giving as little water as will just prevent them from flagging. The same rule to be observed with bulbs, succulents, &c.

2. To propagate, by the middle of August, *Pelargoniums*, *Fuchsias*, &c., as they will do very well in the open air in

sandy soil, the tenderest only being protected with a handlight without heat. Roses, Pinks, and Carnations will want the assistance of a handlight.

3. To sow hardy annuals in poor soil that you expect to bloom early indoors, as *Nemophilla*, &c.; herbaceous *Calceolarias* for spring blooming; Intermediate and Ten-week Stocks for the same season; and to prick off all these except the annuals out of doors as soon as handleable.

4. To repot the *Geraniums* or *Pelargoniums* as soon as the young shoots are one inch or so in length, after you have pruned them back, when the stems are well browned, shaking the earth gently from the roots, repotting in the same or a smaller-sized pot, using light sandy loam, and getting this done so that the roots will be catching the sides of the pot before winter. Keep *Cinerarias*, &c., growing on gently, and as cool as possible to be safe.

5. Do not encumber yourself with too many old plants, and house all in good time, so that frost shall not touch them. Large scarlet *Geraniums* in pots or boxes that could not be saved in a window may be kept dry towards the end of October, and set in a loft or other dry place, and in a fortnight or so may have all the leaves stripped off them; a little protection from frost and the soil not quite dust dry is all they will require before spring. R. FISH.

VINTAGE FETE OF IRRAWANG.

SEVERAL of the country guests who were present at the Irrawang vintage in April have just arrived in Sydney, and their glowing descriptions of the proceedings at this interesting *fête champêtre*—one which marks the commencement of a new era in the history of the producing powers of this colony—have redoubled the regrets of the numerous friends of Mr. Blake in Sydney who were prevented by the inclement weather, and the reports of the flooded state of the country between Morpeth and Raymond Terrace, from availing themselves of his invitation to attend the vintage *fête*. The country visitors were, however, less scrupulous in respect to braving the dangers of flood and field; and equestrians from all parts of a circuit of about forty miles made their way to Irrawang, and acknowledged themselves amply repaid for their venturesome journeying. The festivities, notwithstanding *le temps tempétueux*, were kept up during three whole days, for, with Beranger, the guests remembered that

"C'est l'eau qui nous fait boire
Du vin, du vin, du vin!"

At the right and left, on entering the *chai*, the process of wine making was found to be in rapid progress. In front stood the *pressoir*, which plays so prominent a part in the *procédé*, running out the ruby juice under the action of a powerful screw.

The best judges state that the *must* was, on the average, the richest of any vintage of the present year, promising wines of the finest quality. Some few thousand gallons had already been vatted, and the process of fermentation was proceeding in the tuns containing the recently gathered grapes. Perhaps among the happiest of the faces were those of the German *vignerons*, whose recollections of the vintages of the Rhine and the Moselle were awakened by this first public celebration in Australia of *une vendange*. Yet their songs to the accompaniment of the German band brought down from Sydney by Mr. Blake evinced that, although they fully appreciated the improvement which their migration had effected in all their domestic affairs, their hearts were still in the *faderland*. One of the youngest of the songsters sang with much taste and feeling Speyer's famous song of "Mein Herz ist am Rhein" (My heart's on the Rhine).

In conclusion, we may justly say that this example set by Mr. Blake of celebrating a vintage is worthy of applause and imitation; and we believe that the motto of New South Wales, as he suggests, will henceforth be, "Wool, wine, coal, gold, and tallow."—(*Sydney Morning Herald*.)

IMPLEMENTS AND OTHER CONSTRUCTIONS SUITED FOR GARDENS.

EXHIBITED AT THE HORTICULTURAL SOCIETY'S SHOW AT CHISWICK.

(Continued from page 314.)

MESSRS. COTTAM and HALLEN, of Winsley Street, Oxford Street, exhibited, amongst other articles, this ornamental iron structure filled in with wirework, and answering the purpose of an arbour, summer-house, and temple, for training Roses and other flowers and shrubs. It is made upon an improved principle, combining economy with simplicity and elegance of appearance, and so constructed as to be packed in a comparatively small compass, while it can be easily put together and fixed by any ordinary person, and if not required for a permanent erection can readily be taken down and laid up until again wanted for use. A model of the same is exhibited at the manufacturers' show-rooms, 2, Winsley Street, Oxford Street.

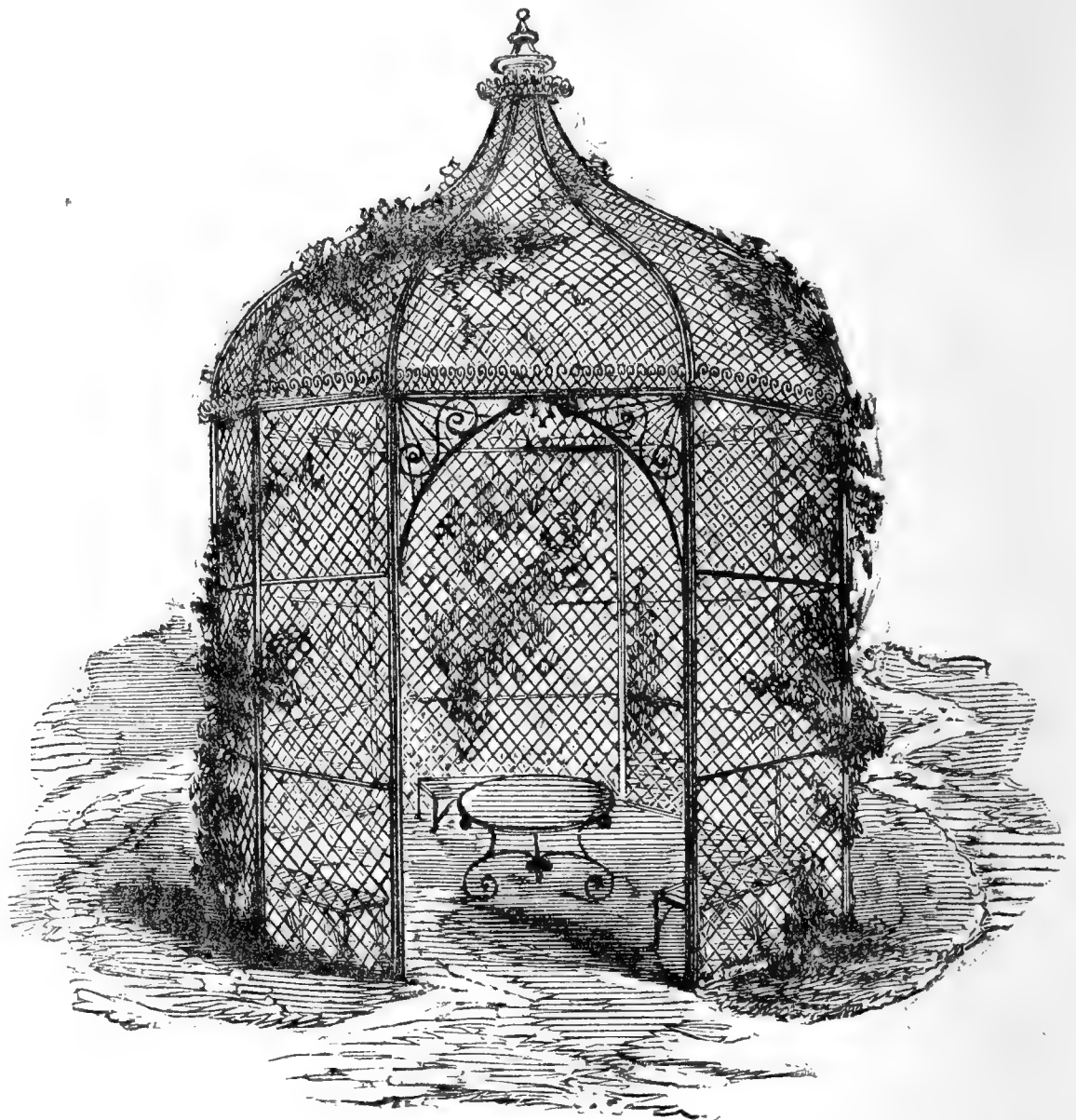
THE VINE MILDEW.

By Professor GIOVANNI AMICI. Read before the Royal Academy of Florence.

It was in October, 1851, that I first found a fructification nearly similar to the one in question on an analogous cryptogam on the Gourd; but, as I had then no means of demonstrating its origin, I did not venture to publish it, as there remained doubts in my mind whether the organs I then found intermingled might not belong to two different plants. But ulterior observations have caused these doubts to disappear entirely, for, adopting the use of reflected light in order to observe the objects without altering their natural position, I could see the stalks of the sporangia inserted into the same filaments of the mycelium from which proceeded the sterile fronds. Besides that, I often met with fructifications having one of the white utricles directly attached to their free extremity, so that the evidence of the passage or transformation of one organ into the others became perfectly clear. Sometimes, also, I met with fructifications contracted in the middle, as if they were formed of two joined together. All these details are faithfully introduced in the preparation No. 2, which shows at a glance, on a highly magnified scale, the whole development of the cryptogam.

On carefully examining with transmitted light, and with a magnifier of at least 600 diameters, the sporangia of our cryptogam, we find them to consist of a coloured cellular membrane, with the polygonal faces somewhat convex, and which includes some hundreds of spores, which, at their maturity, issue in jets by the mere action of water (I counted as many as 289 in one heap). The form of these spores, which are tolerably transparent, much resembles that of the sporidia of some Lichens. They are reniform and ovate-oblong, and, under a very powerful object-glass, two little cavities may be observed at their extremities, containing a most minute globule of some denser matter. The preparation No. 3 represents a sporangium with its contents magnified to 1800 times the diameter.

Probably the spores which I have mentioned are the reproductive corpuscles which Professor Pietro Savi saw vegetate under the microscope, believing them to have issued by a regular longitudinal dehiscence from the utricles of the moniliform filaments which had been supposed to be the sporangia. But this opinion, although maintained by other eminent botanists, is at variance with the facts shown by my own observations. The preparation No. 4 includes five of the above-named utricles, magnified to 1800 diameters. The first utricle is, in the ordinary state, attached to the apex of the ascending filament, with a portion of the corre-



sponding mycelium. Two other utricles are in the process of germination, and vegetate and reproduce the plant after the manner of grafts or cuttings. The appendage which they emit from one extremity of the axis, which is always excentric, resembles the pollen tube issuing from its grain. It is very easy to obtain this result. It suffices to moisten a bit of glass with the breath to cause a number of fresh utricles to attach themselves to it, disarticulating from the filaments. After about three hours nearly the whole of them will vegetate, and the germs will grow under the eye of the observer, till after one or two days, the nutriment supplied to them by the internal substance of the utricle being exhausted, they will die and dry up. A fourth utricle in the above-mentioned preparation, No. 4, shows the manner in which these organs usually shrivel and dry up. On losing, by evaporation or any other cause, the fluid by which the membrane was distended, it compresses on three sides. The extremities, being of a more compact substance, do not give way so much, and hence three longitudinal ribs or angles are formed, and the central one, by an optical illusion occasioned by the manner in which the light is refracted, may easily be mistaken for an aperture, whilst it is in fact nothing more than a plait or fold. The fifth utricle in the preparation is a representation of an artificial section in order to show the very variable globules, and the mucilaginous liquor which the membrane contains.

From the above data it clearly results that the cryptogam prevailing on our Grapes, which is identical in all the specimens I have been able to procure within a radius of twenty miles round Florence, is a very different plant from the *Erysiphe communis*, which no one has observed to appear upon the Grape-berry. I have, indeed, observed upon other plants the true *Erysiphe* with characters far too decided to confound it with this cryptogam of the Vine. It is a beautiful object when seen through the microscope with reflected light, when the field comprises a number of conceptacles in different stages of maturity. Their brilliant colours, which pass gradually from a pale yellow to orange, to red, to dark

blood red, or almost to black, have a pleasing effect on the white ground, formed by the filaments radiating from each of the globose sessile fructifications. Every one of these fructifications when detached carries with it, like a Medusa's head, its radiating serpentine hair, and as the greater part of these filaments separate from the entangled ground without laceration, that is, with their extremities closed and convex, I conclude that these filaments have no connection for the purpose of suction with the interior of the plant on which the *Erysiphe* fixes itself. I am rather disposed to consider them as aerial roots, or rather as fronds analogous to those of Lichens, an analogy which appears to me to extend to other parts of the fructification. The oval spores of the *Erysiphe communis*, from four to eight in number,

are contained in extremely transparent utricles, formed of a coarse membrane of 0.045 millimetres in length, implanted on the conceptacles by a connecting surface of 0.11 millimetres in diameter, not unlike the asci of Lichens. It is not my intention to enter into any more circumstantial description of the *Erysiphe*, or of its mode of propagation. I have only incidentally mentioned its structure, in order to show more clearly how very different it is from the cryptogam of the Grape.

Having cleared up this point there yet remains the most important question. Is the cryptogam the cause or the consequence of the disease of the Grape? I have not the presumption to solve this difficult problem; it would be necessary to have data more evident, more incontestable, and more detailed, to establish any undeniable demonstration. I will only state that I am for various reasons disposed to adopt rather the opinion that the appearance of the mildew is owing to a morbid change which the Grape has previously suffered.

Last year I collected bunches of Grapes, branches of Vine, leaves of Gourds, Roses, and Chrysanthema, all covered with their respective mildews, and shut them all up in a wooden box, with the intention of scattering in the following spring, over healthy individuals of different kinds, the reproductive sporules which it was to be presumed existed amidst the mycelia, and thus, as it were, to inoculate the disease. The experiment was carried out in June this year without producing any cryptogam. It might be supposed that the spores had lost their vegetative powers by too lengthened a state of desiccation. I therefore repeated the experiment in the month of July, making use of fresh mildews which had appeared naturally; the result was the same, the healthy Grapes were not attacked. From this it would follow that the mildew does not produce the disease, or at least that one condition was wanting—the predisposition to contract a disease. I feel, indeed, the force of the objections that may be made to my experiments as being made upon too limited a scale; but, however small, still some value must be attached to them.

The Secretary of Correspondence of our Academy has suggested to me that I should try the inoculating Grapes already diseased, first removing carefully the mildew which may be upon them. I purpose to take it in hand during my next stay in the country; in the mean time, what I am about to state may supply the place of the experiment, and I think speaks pretty clearly. In a vineyard outside the Porto S. Niccolo, near the walls, I was, a few days back, examining a Vine covered with Grapes in the worst state; the farmer observed to me that they had been medicated, and that for a time they had appeared to be cured. I took two Grapes and placed them under the microscope: I found on the Grapes many crystals of urine mixed with other matter, which showed that they had been drugged. But the cryptogam had reappeared as fresh as usual, and as thick as upon the non-medicated Grapes. I hear that a great number of similar facts might be quoted, and they appear to me to prove two things: first, the inefficacy of the remedies hitherto used, and secondly, that the evil originates in the Grapes themselves, or, in other words, in a predisposition to contract disease.

The authors who have treated of the

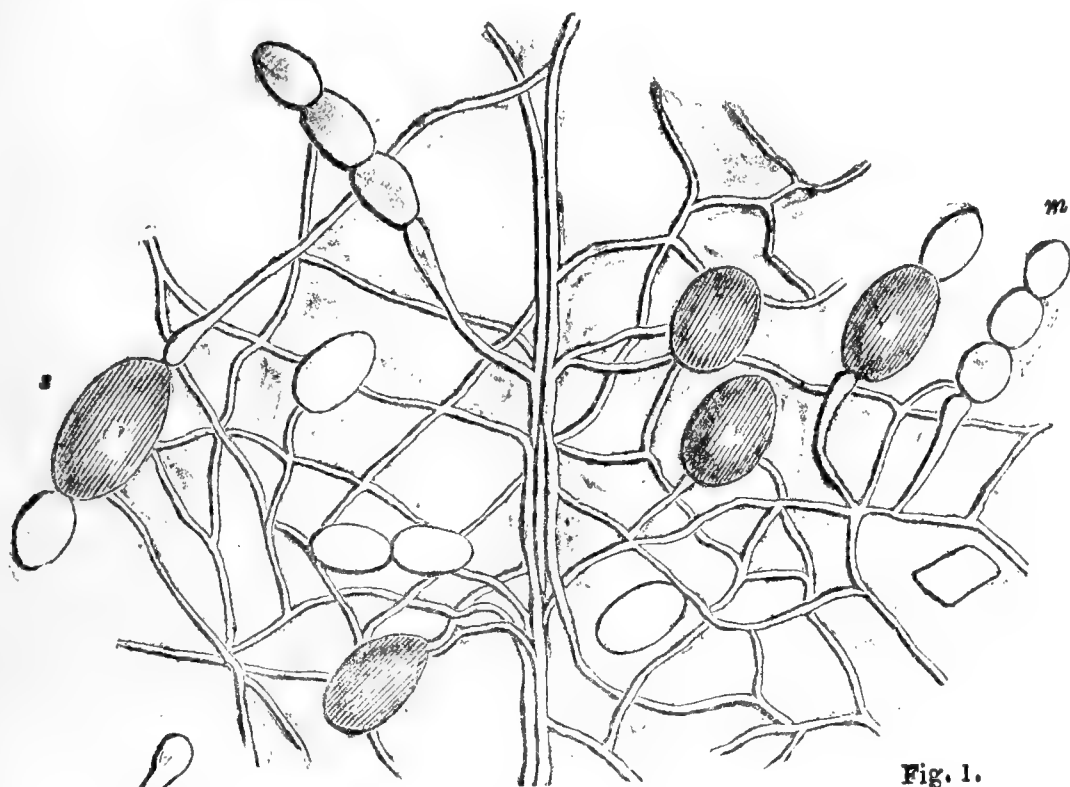


Fig. 1.

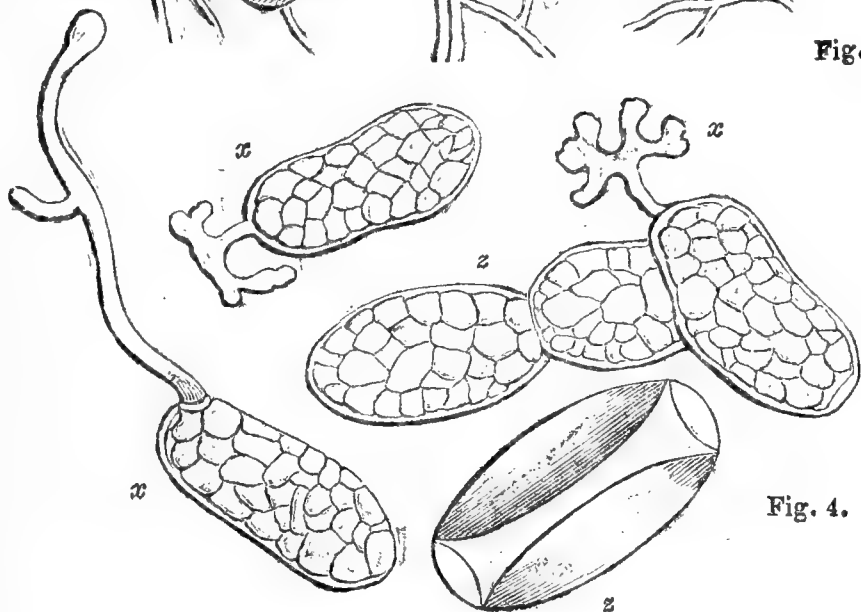


Fig. 4.

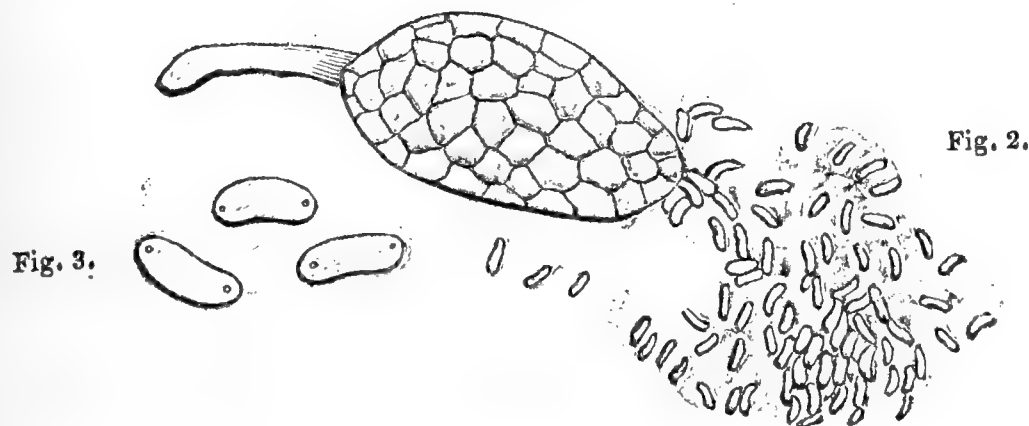


Fig. 3.

Fig. 2.

Fig. 1 represents a small portion of the surface of a Grape on which the cryptogam has spread itself, magnified to 300 diameters. From the mycelium arise moniliform filaments *m*, and the sporangia *s*. Two of the latter have an utricle directly attached to their upper extremity.

In Fig. 2 the sporangium is represented magnified to 600 diameters, and by its side are the spores it has emitted, which, taken separately, are as transparent as white glass; seen in a mass they have a very slight yellow tint. In Fig. 3 are three spores magnified to 1800 diameters, in order to show the nuclei or globules at their extremities.

Fig. 4, magnified 1000 diameters, shows at *x* three utricles in germination. At *y* are two fresh utricles, showing the little globules and the mucilaginous liquid contained in them. At *z* is an utricle shrivelled up by lateral compression, which has given rise to the optical illusion of a longitudinal slit.

Oidium Tuckeri as the cause of the disease admit the predisposition. The same Berenger, speaking of the Erysiphe, says, "Its luxuriant development (*generatio floccipara*) is the true and natural cause of the immense diffusion of the cryptogam, and consequently the immediate cause, *although not the only one*, of the present malady of the Vines. I say *not the only one*, because it is not only probable, but almost certain, that it would not produce that pernicious effect if a certain number of Vines, either by individual constitution, by asthenia, or by some other pathological state, were not in a certain manner *predisposed* to receive it."

Now, I ask, if you grant the predisposition, in what consists, what is, this particular anomalous state of the Vine? If it had been a small vineyard only, or a few plants situated here and there in special localities, it is possible that conditions might be found to account plausibly for the phenomenon. But the question is that of a most extensive fact, of a disease, which, like an epidemic, has spread successively over the whole of Europe where Vines are cultivated. In this case how can the predisposition be explained? It appears to me that the cause of the predisposition remains as obscure as the cause of the disease.

I have said that I incline to believe that the cryptogam does not produce the disease. My opinion founded on the experiment of inoculation is confirmed by the fact, that, among the numerous observations I have made, I have never succeeded in seeing a single filament of the mycelium of the cryptogam without discovering also an alteration in the cellules of the epidermis of the Grape immediately under the cuticular membrane. Such alterations first show themselves in a cellule by a change of colour of the chlorophyll, which from green passes to a pale yellow, the fluid contained thickens and loses its transparency, subsequently crystals are formed, and granulations of various sizes, first of a bay, then of a brown colour. The cellulose, or the membrane which forms the sides of the cell, at the same time thickens and becomes coloured. This organ is now dead, and the lateral adjacent cells, going through the same changes, end also by losing all life. Thus are formed broad dark-coloured spots visible to the naked eye, and which extend even over the whole subcutaneous stratum of the epidermis when the alteration has commenced at several points at once, and the spots have extended so as to run together and unite with each other. Sign. Adolpho Targioni Tozzetti gave last year to the Academy a very clear account of the changes which took place successively in the Grape, and of the apparent seat of the malady. My observations confirm his. I likewise agree with him that the connection between the fungus supposed to be parasitical and the organs of the Grape cannot be established but through the cuticular membrane, which in no one instance, not even immediately over the diseased cellules, is found to be perforated. No sucker can be discovered to proceed from the mycelium and penetrate into the internal membrane of the Grape.

When the cryptogam has appeared, its horizontal filaments extend, passing chiefly over the spotted spaces, which circumstance may be alleged in favour of the opinion that by some invisible communication the fungus exercises some pernicious influence on the Grape; but for myself, having put forward the idea that the cryptogam is not the cause of the disease, an idea which is also mentioned by Sig. Brignoli, in his learned Memoir on the Crambe, I am disposed to interpret this fact differently, and I say that if the fungus vegetates on the diseased Grape, it is because it there finds the proper aliment for its support. This aliment is most probably derived from the fluids exuding from the decomposed cells of the epidermis. It is therefore most natural that the filaments in lengthening should follow the direction of spots where they find a nutritive fluid. This fluid must be in an exceedingly minute quantity, for when the Grape bursts the fungus never spreads or penetrates into the interior, where it might be supposed to find in greater abundance, and to absorb more readily, the fluids it requires.

As I have mentioned the bursting, the final destruction of the Grape, I will add the manner in which I account for it. In the circular field of the microscope I counted up the number of angular cells on the surface of the portion of the epidermis comprised within it. Having subjected to the

same test green and ripe Grapes of various sizes, I always found that the number of cells contained in the same visible surface corresponded very nearly in an inverse ratio to the squares of the diameter of the Grape. From this I conclude that the Grape in enlarging in size does not increase the number of its cellules, but that these are distended in proportion. Now if by the effect of the disease, or from any other cause, the cellulose, as it happens in this case, loses its life, and consequently the faculty of distending, it is evident that the growth of the internal unaffected parts would cause a pressure, and force the epidermis to burst.—(*Horticultural Society's Journal*.)

BRITISH POMOLOGICAL SOCIETY'S MEETING.

A MEETING of the BRITISH POMOLOGICAL SOCIETY was held at the rooms, St. Martin's Hall, Long Acre, on Thursday, the 28th ult., R. Hogg, Esq., V.P., in the chair.

Mr. Rivers, of Sawbridgeworth, submitted a collection of early Peaches which had been grown in an orchard house, with the view of showing the comparative qualities and earliness of the different varieties. The first was the old *Red Nutmeg*, now very seldom cultivated, but the earliest of all Peaches, and which, compared with the *Petite Mignonne*, was very inferior. This is a very excellent early Peach, nicely flavoured, and vinous. The *Early Anne* was of good flavour, but, from being shaded and late in the season, it was pale in colour. *Early York* is a remarkably fine Peach, about medium sized, and with a very tender flesh, which literally melts away in the mouth, and with a rich sugary and vinous juice. This is, without exception, the finest early Peach we have ever seen. *Belle de Croix* is also a very excellent variety, sweet, and vinous, as is also *Précoce de Savoie*, which is very brisk and vinous. *Pêche à Bec* and *Pêche de Doué* were also exhibited, but were scarcely sufficiently ripe. Of the whole collection the *Early York* was by far the finest, and one which ought to be found in every collection, not only for its earliness, but for its remarkably rich, sugary, and vinous flavour.

Dr. Davies, of Pershore, sent specimens of the fruit of three seedling Plums raised in his neighbourhood. *Jemmy Moore* was thought by the Meeting to be very much like *Sharp's Emperor*. *Old Noll* exhibited the properties of a good kitchen Plum; and *Brandy Gage*, which was unfortunately too much decayed, had every appearance of being a rich-flavoured and excellent dessert Plum.

Mr. Rivers also exhibited small Pear trees on the Quince stock, completely laden with fruit, of the varieties *Belle d'Août* and *Beurré Goubault*. The former is an excellent early Pear, large, and of a turbinate form, with a crisp, breaking, very juicy, and sweet flesh.

James Biggar, Esq., of Maryholme, Dumfries, sent fruit of a seedling Gooseberry, which was almost transparent, but it had suffered so much by carriage that the Meeting was not enabled to come to a decision upon its merits.

SMALL DRONES.

WE are greatly obliged to Mr. Moore, of Strafford, near Manchester, for the small drone bee which he kindly sent us. It differs in no way from a common drone except that it is nearly two sizes less in bulk. This dwarf male bee might pass for a large Cousin John, or Fiddler, as that insect is called in Scotland. We give the local names, not having Mr. Curtis at hand. There are several kinds of them, and they often survive late in the autumn on Ivy blossoms, long after the hum of bees has ceased. If we mistake not their eggs are laid and hatched in stagnant water, and in very different places from the heart of a bee-hive. Until now we only knew of small drones by hearsay, and, in case there may be any doubts on the subject, we cannot do better than give Mr. Moore's own account of the capture of the small one in our possession. He says, "I found the male bee on the ground in front of the hive at 8.15 yesterday. Thinking it was a young worker I placed it at the entrance of the hive, which it quickly entered. As it did so I suspected it was a small drone, but it was gone. In a few

minutes I had the satisfaction to see a worker bringing him back by force, and succeeded in arresting them as the worker was flying away with him. He was very lively when caught, but this morning I found him dead." This account agrees with what Mr. M'Lellan lately stated on this subject; therefore there can be no doubt of the existence of small drones, though there may be of the cells in which they are bred.

We still incline to the belief of Key's and other old apiarians that dwarf drones come from eggs laid in the cells of workers; and we may note that we do not rely much on the common belief that the cells of bees soon become too small, from the skins or parts of the cocoons left in them by the insects, to rear full-sized bees. We have had strong swarms from combs twelve and fourteen years old. But supposing that small drones come from eggs laid in contracted male cells, as these in general are only occupied once in the season with brood, and yet become so, what size must those of the workers be? According to this notion hives about four years old should throw off only swarms of baby bees.—J. WIGHTON.

ALLEGED CURE FOR THE VINE MILDEW.

BEING an amateur in the cultivation of the Vine, like most others I have been occasionally troubled with the disease which has been so prevalent. I was led to try a solution of the *permanganate of potass*, and, by syringing the Vine and fruit *only once*, I found it removed all trace of disease, and the foliage assumed a far more healthy appearance than it had ever done before. I was then led to try its effects on an *Hibiscus* which was covered with *Aphis vastator*, and found it equally successful; so that I consider it might entirely supersede the use of the fumes of tobacco, and save a great deal of expense and labour also. The strength of the liquor of which I made use was half a pint of the solution of the permanganate to two gallons of water.—W. BARTLETT, *Pharmaceutical Chemist, 1, Bretten Terrace, King's Road, Chelsea.*

[Some of our readers may not know that permanganate of potash is composed of an acid obtained by combining manganese with oxygene, and this acid with potash. It may be obtained of any pharmaceutical chemist.—ED. C. G.]

"WORDS TO LABOURERS."

UNDER this title the Rev. E. F. Beynon, President for the year of the East Surrey Agricultural Association, has published an admirable penny pamphlet. That it deserves to be widely distributed the following extract will prove:—

"The late Sir Robert Peel (whose father was himself an instance of a man who, by his industry, integrity, and skill, had raised himself to a high position in society) stated in the House of Commons that he knew ten men who were receiving twenty-five or thirty shillings as a week's wages, when he was a boy, who were worth, at the time when he was speaking, from £50,000 to £100,000 each. On this occasion he also dwelt upon the importance to working men of a small saving. 'It may be,' he observes, 'the foundation to them of future independence; it may enable the father of a family, imitating the honourable example of the Hon. Member for Salford [the late Mr. Brotherton, then in the House of Commons], to gather that family round him, and say, 'From these small gains I will lay the foundation of a fortune, such as hundreds in Lancashire have acquired by their own industry and integrity.' The great Rothschild began by buying prints at Manchester, and ended by becoming the principal money power of Europe. But you may say to me, 'True, but these examples are comparatively useless, and do not meet our case; we do not live in a manufacturing but in an agricultural district, and do not earn twenty-five or thirty shillings a week. Granted, but I will tell you of men in your own position and walk of life who have raised themselves in a similar manner. On a former occasion I alluded to the late Alderman Kelly, who, when a boy, fed sheep on the Surrey Hills, and afterwards, by his honesty, industry, intelligence, and skill, raised himself to

be Lord Mayor of London, and had the honour of receiving at the ancient gates of the city, over which he presided, our present gracious sovereign Queen Victoria, on her accession to the throne. Dr. Lushington, at an agricultural meeting in Kent not long since, mentioned the circumstance of a gentleman who once fed sheep upon the downs of Lancashire being made a magistrate by the Duke of Portland, the Lord Lieutenant, and who shortly after received the thanks of the magistracy of the whole county for his intelligence and zeal. Sir Joseph Paxton, of Crystal Palace celebrity, commenced life as a gardener; and the best mathematician at King's College, Aberdeen, at this time, is a man who part of the year works in agriculture, and during the other part studies in college. Seek then to inscribe your name in that golden record of self-made men, a place in which none of us can inherit, but all may aspire to attain. I do not, indeed, suppose that you will all become lord mayors, magistrates, or mathematicians, and if you do you will not be freed from work, for you will have brain work, than which none is more arduous; but you may all achieve excellence and honour in your own position by integrity and skill. Yes, my friends, there is a greatness and a dignity in any useful employment, but it is a greatness within you, and not without you. True wealth does not consist in riches, or power, or rank, or in the three united. As the poet sings—

'The rank is but the guinea's stamp—
The man's the gold for a' that.'

But he is not worthy of the name who does not use and improve the abilities which Providence has given him; and the man who does use them, who does rightly employ the highest of the gifts of God to man, may look forward to attain, in some degree, both a material and moral greatness. The steps up Fortune's ladder to success in life are not so numerous or so difficult as to forbid a trial of them. Many have trodden them with advantage to themselves and benefit to society, and reached a happy termination to their labours and their toils; and you, *you* may do the same. First of all you must have self-reliance, and if there be one worldly lesson more than another which you could learn to your advantage, it is that of dependence upon your own powers, under Providence, to achieve your own advancement. The next step is industry—'the diligent hand maketh rich.'

'Round swings the hammer of industry,
Quickly the sharp chisel rings,
And the heart of the toiler has throbblings
That stir not the bosom of kings.

'He the true ruler and conqueror,
He the true king of his race,
Who nerveth his arm for life's combat,
And looks the strong world in the face.'

From D. F. M'Carthy's Poems.

Then you must have perseverance—you must persevere in the path which you have chosen, and not be discouraged by trials. Partial successes only, amidst frequent disappointments, must be looked for in our passage through a fallen world. Next, you must have thrift; be careful how you spend and how you pay; remember the old maxims, 'Waste not want not;' 'A penny saved is a penny gained.' Be mindful of the words of the late Sir Robert Peel, that 'a small saving may be the foundation of future independence.' John Wesley, in his sermon on the use of money, says, 'Make all you can—save all you can—give all you can.' You must also have temperance. Intemperance, like improvidence, is one of the evil eyes which look upon the labour of this country, and is not only the father of that cruel wolf which seeks admittance to the poor man's hearth, viz., want, but is the destroyer of a man's own self-respect, comfort, and respectability. You must likewise possess integrity of heart both towards God and man; be just and true in all your dealings, and commend yourselves by probity of conduct alike to all around you, as to Him 'who seeth not as man seeth.' The last step of the ladder which, by the divine blessing, you may hope to attain is independence. In one sense, indeed, it is true that you are all dependent—*dependent* upon the 'great Creator for the mercies, and bounties, and blessings, which come to you from hour to hour—*dependent* upon your fellow-creatures for the supply of your wants and the many comforts of your lives; but it is equally true that a happy competency is most desirable when sought for on Christian principles—a competency which, while it renders

you not dependent as a burden upon others, may enable you, like the good alderman whose name I have before mentioned, to have to give to him that needeth, and thus to 'lend unto the Lord.'"

QUERIES AND ANSWERS.

TANK FOR HOT WATER.

"I am about erecting a tank 11 feet by 3 feet. Will you be kind enough to give me directions how to proceed? It will be raised 2 feet from the ground. I am told that, if bricked and cemented, the cement will crack with the heat; but I think it an erroneous view. I should prefer three-inch pipes to pass through if not too expensive, connecting the tank with other pipes in an adjoining greenhouse, 16 feet by 18 feet, 6 feet high in front, and 12 feet at back. What size boiler would be required, say of Thomson's retort? I have one by me, 12 inches by 14 inches and 3 inches deep, with flow-pipe rising from the middle of the top. How should it be set to obtain the greatest exposure to the fire?"—T. WICKHAM.

[You will have noticed what has been said in previous articles, "Pipes *versus* Tanks." As you contemplate both we have nothing to say against your plan further than that many would be contented with one. We presume that your tank is to be always heated, and the heat to pass through it before it reaches the greenhouse. The circulation of the tank, therefore, must be perfect in itself, and stop-cocks must regulate the circulation from the pipes in the tank to those in the greenhouse. There is no danger of the tank cracking under ordinary treatment if supplied with water. About six inches are deep enough for anything. It matters not whether you raise it to that height or two feet from the ground. The greater the quantity of water the longer will it be heating. You would require at least eighty feet of three-inch pipe in your greenhouse, and the pipes to be on the same level as those in your tank, with an air-pipe at the farthest end. One of Thomson's retorts would heat that for you. The one you have will be small enough, and to make the most of it the fire should be made to play under it and all over it, which any bricklayer that has ever set a washhouse copper will manage for you.]

CUTTING DOWN *CHIRONIA DECUSSATA*.— SHIFTING *MEYENIA ERECTA*.

"Will you inform me whether *Chironia decussata* may be cut down after flowering, as it has grown long and straggling?"

"*Meyenia erecta*.—I have a nice little plant of this, but have been told that it is very apt to shed its leaves with every change of place, such as from a stove to a greenhouse, or *vice versa*. Is such the case, and could it be safely sent to a Flower Show?"—W. O. D.

[You may safely cut back your *Chironia*, but let it get dryish first, and do not overburden it with water until the young shoots are coming freely.

The *Meyenia* may be safely moved this month, but you should inure it to a natural atmosphere by degrees. Few plants will bear moving from a damp, hot stove all at once. They should be placed in a cool, airy position for some days before moving is contemplated.]

GRAPES SETTING BADLY.

"In a span-roof vinery with one four-inch pipe, round which the water is occasionally turned at night, and always from March 1st, only, however, from five in the evening until eight or nine next morning, as it is borrowed from the bottom heat of an adjacent Melon bed, I have a few White Frontignan Vines trained rod fashion up every third rafter: these are 'bad setters,' though prolific enough. I am anxious, by amended culture, to remedy the evil if possible. At breaking time the house is kept tolerably moist, and the temperature is far removed from that of a cold vinery. On that account, too, I ventured upon a Muscat, and hoped that, by breaking them as late say as March 1st, they might be coaxed to set better than they have, at least this year, when, the water having been a good deal turned on all the winter,

they began to move in February. Any hints on the *questio vexata* of these Grapes, 'bad setting,' will oblige. The borders are good—made after the most approved fashion with a combination of lime rubbish, hassocks, rubble, manure, and *not too deep*: subsoil well drained. A Barbarossa Grape has set magnificently, though a shy bearer."—J. S. L.

[You will no doubt succeed better the longer you are in starting your house, as thus you will have the natural sun heat to assist you. We have thus set Muscats and Frontignans freely in a late house, where little or no artificial heat was given until the Grapes were showing their fruit. You must try, however, to be able to put heat on in dull, cold days, especially when the Vines are in bloom. At that time they should seldom be below 65° at night, and 70° during the day, though we have seen them set well at 60° at night, with a rise of from 10° to 15° during the day. As the Barbarossa has set well we should imagine there could be no difficulty with either of the other two. With Frontignans we seldom use any expedient; but with the Muscats, and especially in cool houses, we draw a dry hand over the bunches when in bloom.]

CULTURE OF THE TEA PLANT.

"I was induced, from a remark in Fortune's work on his tour to the Tea plantations in China, to purchase a Tea plant last spring, and after my repotting from the nursery in the same kind of compost as my Camellias, and placing it with them in making their young wood, it made very little growth; but it has got so full of a dirty black, I suppose an insect, that I am at a loss to know how to manage it, and shall be much obliged to know what I can do to grow it clean and healthy. If all the Tea plants in China are infected like my plant our Tea would be very scarce and high in price.

"My Tiger Lilies came up this spring with fine strong heads, and I expected to have had good flowers, but they are very small. The two roots have been two years in the same spot. What can I do to improve them?"—M. F.

[When we used to grow the Tea plants we found that *Thea viridis* was the hardier of the two, and did best in deep pots or planted out; and, with the exception of liking shade rather more, it thrived in the same treatment as the Camellia. The *Thea Bohea* is altogether a smaller, bushier, and rather more tender plant, and though not disliking a little shade, yet it ought to stand near the glass, for if not the leaves will become dirty and yellow. In your case the only remedy is to wash the leaves with soap water and a sponge, and then syringe over or dip the plant in clear water. Attend to the conditions mentioned above, see that the drainage is all right, and water as the plants need it. The *Thea viridis* used to stand in several places round London with little or no protection. We fear either that the soil in which your Lilies are growing is exhausted, or that they have suffered from want of water. We have known them do many years in the same pot if top dressed yearly and supplied with manure waterings. In your case the following treatment might be desirable:—As soon next season as you observe the bulbs moving, shake the earth from them, or nearly so, and repot into fresh soil, using rich fibry loam and peat, and placing the bulbs about the middle of the pot. This will permit of frequent earthings up as the stems grow, which will greatly strengthen them.]

PEACHES NOT MATURING.—SUCCESSION OF STRAWBERRIES.

"Will you explain the cause of some Peach and Nectarine trees failing to mature their fruit? They were planted eight years since inside the house; when planted, turfy loam and dung were added to the original soil, which was light and chalky, resting on chalk. The border is from fifteen inches to eighteen inches deep; drainage good. I cannot raise the border, on account of the hot-water pipes being close on the surface of the border. The trees grew vigorously for four or five years after planting, but are now on the decline. Some fruits shrivel on the trees; others are not good flavoured; some do not ripen; the trees are not over cropped;

they flag on sunny days, as if wanting water, though the soil is kept moist. They have but little fire heat, but abundant ventilation night and day. There is no vermin, but still they get worse; one of the healthiest trees has some of its branches dying.

"I am about making some Strawberry beds, and shall be glad if you will tell me what sort is best to plant. I want them for table fruit, consequently the highest flavoured I can get. I also want them in succession as long as it is possible to get them."—PEACHES.

[The fault is at the roots. Whether they have sufficient room to spread out their roots we cannot say. You say the border is fifteen inches to eighteen inches deep, resting upon a chalk bottom: two feet would have been better. What you say about airing the house is all very proper; but the trees have wanted nourishment at the root. A good soaking of manure water once a week all the summer would have helped them, and most probably all that was required; and so it would now if the soil was opened carefully with a fork, so as to let in the water to every part of the roots. This should be well done, the earth thoroughly saturated, and once a week, for the next three or five weeks to come, water from the drainage of a pigsty, or some other strong nourishment, and attend to stirring the earth about the border, and to giving a good syringing overhead once or twice a week. This treatment, we think, soon will improve your Peach trees. We do not know of what construction your heating apparatus is, but it ought to be so arranged as to enable you to have the border at free will, to be able to replant, top dress, or make anew if required.

Strawberries to bear next year should have been all planted before this time to have them really good next year; but, of course, better late than never. Good plants and good attention to the soil, watering, and earth-stirring afterwards until they are well established, will help to make up for loss of time or season. The following sorts are among the best to supply a family with early and late:—*Black Prince*, very prolific and early; *Keens' Seedling*, large and good bearer, one of the best; *Myatt's British Queen*, fruit large, and one of the best flavoured of all; *Underhill's Sir Harry*, fruit large, excellent, and a great bearer; *Old Pine*, flavour excellent, and great bearer; and *Elton Pine*, one of the latest, fruit large, and very handsome.]

TIME FOR MAKING CUTTINGS OF BEDDING GERANIUMS.

"Last year I struck all my scarlet Geraniums in the open ground on a south-west border, and out of some hundreds hardly lost a cutting. This year I have put in about 500, and have also put in the *Golden Chain* with them, and it is with regard to these latter that I wish to know in time if I stand a good chance with them out of doors, as I have only taken half the number I mean to have, and if you think it not prudent to put them all in out of doors I shall strike the remainder under glass. My cuttings which were put in about the 10th of August, notwithstanding the heavy rains, look splendid; but I grieve to say that I have already had a good many cut down by grubs. Can you tell me if there is any way of driving these pests away? It was from your valuable paper I derived my information for so easily supplying myself with such fine plants. I truly believe they will stand twice as much ill-usage in winter as those I used to strike under glass."—G.

[Cuttings of the *Golden Chain* Geranium should never be made in summer. February and March are the proper time, also for *Alma*, *Touchstone*, *Lady Mary Fox*, and all the Unique breed; while *Diadematus*, *Quercifolius*, and all such may be made all the year round. You will strike *Golden Chains* in August in the open air, in or out of pots, easily enough; the bother is in keeping them over the first winter. The old plants will take up just as much room without the cuttings, so what advantage is it saddling yourself with the cuttings? Moreover, cuttings of the *Golden Chain* struck in February will take to the beds in May much faster than autumn-struck ones. Grubby land should be trenched the week before the cuttings are put in, and in a day or two, or when the surface is quite dry, the whole

should be pressed down by walking over it "heel and toe," that is, making foot marks all over it; after that a good rough raking; then you must depend on little drills, big cuttings, and good luck.]

ACROCLINIUM ROSEUM.—ARCTOTIS BREVISCAPA. DELPHINIUM FORMOSUM BLOOMING TWICE.

"I should be glad of your opinion of the new annual *Acroclinium roseum*. In a monthly periodical there is such a description of it that one would think it the best annual grown, but that is certainly not my experience of it.

"Let me recommend to your readers *Arctotis breviscapa*, a beautiful half-hardy annual. It has a fault—keeping open only part of the day, and it is spoiled by rain, but yet it is very beautiful.

"*Delphinium formosum*, sown February 28th, is throwing up its second crop of bloom. This is worth knowing. Should you like the returns of temperature for the last two or three months?"—A. R., Bromley, Kent.

[We have not yet seen the first annual you name, but we expected to hear better accounts of it.

How was the *Delphinium* treated?

Could you give us a comparison of the temperature of the four summer months for the last ten years?]

VARIOUS.

"What can I at this season put into two flower-beds from which I have just removed blue *Nemophila*?"

[Geraniums, Calceolarias, or Verbenas out of pots, or other pot plants.]

"Is it quite necessary for *Verbena cuttings* to be put into a hotbed at present, or will they do in the open ground, and till when?"

[It is not at all necessary to put them in a hotbed, and they will not do in the open air: a close cold pit is the right place.]

"I have four large vases on a terrace wall, in which are scarlet Geraniums, which I wish to be full bushy plants. Will you tell me how to begin, and how to treat them in winter?"

[Cut them to the old wood at the end of the season, keep them from the frost, and allow them to break very slowly in the spring.]

"When may I sow Turnips and Carrots so as to have them soonest in spring?"

[Sow the Turnips at once, but the Carrots will not do without a glass frame.]

"What can be the reason that, with every advantage, my Lettuces and Radishes, when quite young, are as hard as wood?"—MABEL.

[Lettuces and Radishes do not come hard except on wretchedly poor land, or on very ill-cultivated ground. Ridge up a border for them this winter, and put three inches of quite rotten dung all over it. After the first frost dig it deep, and mix the dung well among the soil. When the surface is very dry in February, or at the end of January, put two inches of rotten tan, the refuse from a peat rick, or a good sprinkling of salt all over it, stir the surface, and sow.]

TO CORRESPONDENTS.

VARIOUS (*A Beginner*).—*Cuphea miniata* and *strigillosa* will suit you. Have you noticed how these and *platycentra* are visited by bees? *Salvias* and many other bedding plants would also suit you. The *Martynia fragrans* may be kept well over the winter if not over-potted, but not if merely kept from frost: it will require from 45° to 50° to keep it healthy. It will, in general, be better to sow every March in a sweet hotbed, and harden off by degrees to a greenhouse treatment in summer. Such lists as you require have been repeatedly given. Almost all perennials and biennials may yet be sown, but they will bloom later next season than if sown earlier, but most likely will pass the winter better. We have just sown seeds of *Delphinium formosum* and *Hollyhocks*, both of which we expect to bloom next year.

COOKING THE CITROUILLE (*T. Fox, jun.*).—Let it be boiled like the Vegetable Marrow, and served upon toast, eating it with melted

butter and pepper. When old the flesh may be made into soup like any other of the Pumpkin tribe. There is a good recipe at page 43 of our No. 5.

TOMTITS AND BULLFINCHES.—*E. C. K.* says that if Mr. Brent will "put nets over a couple of his Gooseberry trees so as to exclude bullfinches, &c., he will guarantee him a much finer crop on them than on those pecked by his favourite birds." Our experience teaches us that bullfinches are mischievous both to buds and fruits, but we do not think tomtits are, for they are soft-billed birds.

GRAPES FOR GREENHOUSE (*A. B.*).—Two *Black Hamburgs* and one *Black Champion*, in your house twenty feet long, will be best for you. You must not let them exclude much light, or your flowers will not flourish. Two-year-old plants growing now in pots will come soonest into bearing turned out into the border inside the house. Four parts turfy loam and one part of lime rubbish will be the best compost.

GERANIUM (*G. A.*).—It was all in fragments and dry. Damp moss in a stout box, and a truss with the flowers only half opened when gathered, are the mode to send Geranium flowers to us.

PRESERVING KIDNEY BEANS (*G. T. F.*).—Try the mode recommended for Peas in our No. 464.

DISEASED GRAPES (*Miss Peacock*).—They are shanked. The roots are torpid from being too deep in the ground, or from some other cause; they may want more air, more warmth, more moisture, or more food.

NAMES OF PLANTS (*A Young Gardener*).—No. 1 Fern is the *Adiantum pubescens*, native of New Holland. 2. *Lastræa thelypteris*. 3. *Asplenium adiantum nigrum*. These two are British. (*Lonicera*).—Your shrub is one of the *Arbor-vitæs*, *Thuja Warreana* or *plicata*. (*Merioneth*).—Your plant is one of the Indian Shots, probably *Cunna glauca*. (*H.*).—Your plants are the *Tecoma jasminoides*, of the natural family Bignoniads, and *Sedum telephium*, or common Orpine. (*W. C.*).—No. 1. *Gomphocarpus fruticosus*, the Willow-leaved Gomphocarpus. No. 2. *Enothera macrocarpa*, the Missouri Evening Primrose. (*G.*).—*Sparganium ramosum*, the Bur-reed. (*T. M.*).—*Gnidia simplex*, Flax-leaved Gnidia, a hardy, airy greenhouse plant. You can have the cases by post, you paying the postage.

GREEN-EDGED PETUNIA (*Petunia*).—All shrivelled up; but it does not seem to differ from many others we have had sent to us.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

SEPTEMBER 2nd. DEWSBURY. Sec., Harrison Brooke, Esq.
SEPTEMBER 4th. SOWERBY BRIDGE. Sec., F. Dyson, Esq. Entries close August 26th.
SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Sec., Mr. H. Churchill King's Head Hotel.
SEPTEMBER 9th. HECKMONDWIKE. Secs., Mr. G. H. Rhodes and Mr. Fred. Brearley. Entries close August 31st.
OCTOBER 1st and 2nd. WORCESTER. Sec., Mr. G. Griffiths, 7, St. Swithin Street, Worcester. Entries close Sept. 19th.
OCTOBER 7th. SOUTH WEST MIDDLESEX AGRICULTURAL SOCIETY. At Gunnersbury Farm, Ealing. Sec., J. Gotelee, Hounslow.
NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.
DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.
DECEMBER 30th and 31st. BURNLEY AND EAST LANCASHIRE. Entries close December 1st. Secs., Mr. Angus Sutherland and Mr. Ralph Landless.
JANUARY 4th, 1858. KIRKCALDY POULTRY AND FANCY BIRD SHOW. Sec., Mr. Bonthron, jun., Thistle Street.
JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.
JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.
FEBRUARY 3rd and 4th, 1858. PRESTON AND NORTH LANCASHIRE. Secs., Mr. R. Teebay and Mr. H. Oakey, Preston.
N.B.—Secretaries will oblige us by sending early copies of their lists.

HOT WEATHER AND ITS CONSEQUENCES.

We have sometimes asked ourselves what would be the result of our CHRONICLE appearing in blank, save one little note to whom it might concern, that the Editor must have his holiday, and that he was taking it. Does heat engender laziness? We do not confound idleness and laziness; we would call the former a chronic complaint, and the latter an accidental weakness. For instance, we are now overcome with the weather. We have tried a walk in Hyde Park, we sought the fine old trees, and we laid down under their shade, and we slept away the time when we should have been writing. When we awoke we sauntered down Rotten Row, and there was a solitary horseman. If we are wrong we beg his pardon, but we think even now he was asleep. And we went down St. James's Street, and looked in at the Clubs: there were two members in Boodle's, one in Brooks's, none in White's, and three in the Conservative. In Pall Mall we saw three Guards-men asleep in the front. The Carlton and Reform looked, as usual, formal and clean, and we strolled

into the Strand. Here we found life enough; indeed, there was too much for us in our semi-somnolent state, and we joyfully turned out of it to cross Waterloo Bridge. This hardly suited us. There was a time when Waterloo Bridge was what Southwark Bridge is—a place where you would send a man condemned to solitary confinement; but the railway has altered it, and now there is a living tide. We could not get up to writing pitch, we had slept in the park, we had walked half dreaming thence to the Surrey side, and the sight of people hurrying along was painful to us. We sauntered, our eyes partially closed, our hands crossed behind our back, and ran heedlessly against people without minding the remarks to which such a course exposed us. We could have quarrelled with a post. We are afraid many of our readers know the feeling. Had it continued we know not what the contiguity of the Thames might have tempted us to do, but the crowing of a Bantam cock roused us. We woke up close to a small crowd, and in front of the "happy family"—two monkeys, two rabbits, a dog, two cats, several rats, an owl, a cock and hen, and a tribe of sparrows. A full-blown smile decorated our features, and we felt a desire to feed them. Most men in London who follow a trade are tolerably good judges of the spot most favourable for its exercise. Thus in the parks, in the neighbourhood of the water where the swans frequent, itinerant vendors of cakes are to be found. In hot weather gingerbeer and lemonade follow every crowd. On the ice in the winter hot elder wine and brandy balls meet you at every turn. During the crowded May Meetings in Exeter Hall the doors are beset by vendors of oranges, and here, close to the happy family, was a retailer of cakes. The spell upon us was broken, and we determined to study this "abode of bliss." We invested largely in biscuits, and cast in pieces one or two at a time. The rat took a morsel from the dog's mouth, mice fed from the crumbs that fell from the cat, and, save that the monkeys performed all sorts of antics and longed for mischief, it seemed to be verily the abode of love. But it was evident they were not hungry, and when we asked the man what the result would be if they were not fed for two days he only shook his head and laughed. The truth is they prey on each other for food, not from any antipathy. The monkey is naturally fond of teasing, and, hungry or not, he worried them all.

We continued our walk on the Surrey side, and before we had reached the New Cut we were in a poultry region. Fowls were running about in all directions; there were even a few ducks. We could but reflect that wherever the possibility occurs, there man gives way to his natural tastes and surrounds himself with animals. Here they were, within five minutes' walk of the busy Strand, enjoying themselves in the public road. The effect of the Poultry Shows of late was very manifest. Ten years since the birds would have been such mongrels, no one could have ventured to guess their breed; now it was plain in every one. They were Cochins, Spanish, and Golden-spangled Hamburgs. Some of them, clean and in good condition, would have been good specimens. We continued our walk a little farther, and then saw some of the best Game fowls we have ever seen; in fact, we were suddenly in a poultry district in the heart of London.

BRIDLINGTON POULTRY SHOW.

THIS annual gathering took place at Bridlington on the 19th ult., when about 300 pens of fowls were exhibited. The entries included the names of many of the principal breeders of the country. The *Gold* and *Silver Hamburgs* were very good. The *Cochin-China* pens were also very superior. Mrs. A. Watkin, Walkley, near Sheffield, had a pen of very fine birds, but the prize was awarded to Mr. T. H. Barker, of Hovingham. As usual, the black *Spanish* fowls commanded no little attention. These pens were surrounded by a crowd of spectators during the day, and amid the bonnets, hoops, and crinoline of the fair gazers it was indeed difficult even to obtain a glimpse of those fashionable and highly-valued birds, of which no less than nineteen pens were exhibited. The pens of Mrs. J. C. Hall, of Surrey House, of the Hon. W. W. Vernon, and of Dr. Pierson, who has carried off the prize here for many years, and is looked upon as the "Rake" of the north, were much admired.

This time, however, the doctor was forced to lower his flag, the two principal prizes coming to Sheffield, Mrs. J. C. Hall carrying off the first prize for the best Spanish cock and two hens, and the first prize for the best Spanish cock. The Judges were Mr. Sigson, Welburn, and Mr. J. B. Stead, of Leeds.—(*Sheffield Telegraph*.)

COCHIN-CHINAS.—First, T. H. Barker, Hovingham. Second, D. B. Turner, Hull. *Cock*.—Prize, T. H. Barker. *Chickens*.—Prize, T. H. Barker.

DORKINGS.—First, S. Burn, Whitby. Second, H. W. B. Berwick. *Cock*.—Prize, W. Burn, Whitby. *Chickens*.—Prize, H. W. B. Berwick.

SPANISH.—First, Mrs. J. C. Hall, Surrey House, Sheffield. Second, T. T. Pierson, Bridlington Quay. *Cock*.—Prize, Mrs. J. C. Hall. *Chickens*.—Prize, S. Robson, Pocklington.

GAME (Black-breasted and other Reds).—First and Second, J. Watson, Knaresborough. *Cock*.—Prize, T. Staley, Walkington. *Chickens*.—Prize, J. S. Jordan, Eastburn.

GAME (Blacks and Brassy-wings).—First and Second, R. Ward, Driffield. *Chickens*.—Prize, J. Woodhouse, Bampton.

GAME (other kinds).—First, H. Adams. Second, J. Mitchell, Welburn. *Cock*.—Prize, A. Foster, Driffield. *Chickens*.—Prize, H. Adams.

HAMBURGH (Golden Pheasant or Spangled).—First, H. Adams. Second, T. Simpson, Hull. *Cock*.—Prize, E. Charter, Driffield. *Chickens*.—Prize, W. Horner, Newsham, Thirsk.

HAMBURGH (Silver Pheasant or Spangled).—First, H. Adams. *Cock*.—Prize, B. Garton, Bridlington. *Chickens*.—Prize, G. Grimshaw, Bridlington.

HAMBURGH (Golden-pencilled).—First and Second, W. Smith, Driffield. *Chickens*.—Prize, W. Horner.

HAMBURGH (Silver-pencilled or Chittprat).—First, J. Tindall and M. Harrison. Second, R. Goulden, Bridlington. *Cock*.—Prize, J. Falkiner, Hunmanby. *Chickens*.—Prize, J. Falkiner.

BANTAMS (Gold-laced or Spangled).—First, G. Lamplough, Bridlington. Second, G. Limon, Bridlington. *Cock*.—Prize, F. Richardson, Filey. *Chickens*.—Prize, R. Wyvill, Bridlington.

BANTAMS (Silver-laced or Spangled).—First, Holloway and Winter, Hull. Second, R. Woodmansey, Bridlington.

ANY VARIETY NOT PREVIOUSLY CLASSED.—First, B. Garton. Second, G. Winter, Hull. *Cock*.—Prize, G. Winter, Hull. *Chickens*.—Prize, B. Garton.

GUINEA FOWLS.—First, Miss E. Creyke, Marton. Second, Mrs. F. Rounding, Kilnwick.

GESE.—First and Second, Mrs. Crompton, Bridlington. *Goslings*.—Prize, Mrs. Crowe, North Dale.

DUCKS (Aylesbury).—First, R. Crowe, Speeton. Second, Miss M. Taylor. *Ducklings*.—Prize, R. Crowe.

DUCKS (Rouen).—First and Second, T. H. Barker.

DUCKS (any other breed).—First, Mrs. Ringrose, Willerby Wold. Second, R. Goulden. *Ducklings*.—Prize, Mrs. Ringrose. *Muscovy*.—Prize, J. Vickerman, Speeton.

TURKEYS.—First, Mrs. Crompton. Second, Miss M. Grainger, Auburn House. *Poults*.—Prize, Mrs. Edwards, Flixton.

PIGEONS.—*Tumblers*.—Prize, D. B. Turner. *Trumpeters*.—Prize, Mr. Smith, Hunmanby. *Fantails*.—Prize, S. Bielby. *Croppers*.—Prize, T. Straker, Beverley. *Jacobins*.—Prize, D. B. Turner. *Carriers*.—Prize, S. Bielby. *Any other variety*.—Prize, R. Stephenson, Beverley.

RABBITS (any breed).—First, W. Ellison, Driffield. Second, W. Medd and J. Wilson.

CANARIES.—*Best collection of not less than six*.—First, J. Ward, Scarborough. Second, J. Appleby, Scarborough. *Pair*.—First, J. Appleby, Scarborough. Second, J. Ward.

CLASS 8.—PIGEONS WITH PECULIAR PLUMAGE.

VARIETY 1.—THE FRILLBACK (*Columba crispis pennis*).

German, DIE STRUPP TAUBE.

ALDROVANDUS describes this Pigeon as all white, with curled feathers and red claws. His plate of it is smooth-headed and stocking-footed. I have not met with any French description; but they seem well known in Germany, where they are called *Strupp*, *Wollige*, or *Lockige Taube*. Gottlob Neumeister describes them as "slightly larger than a Dovehouse Pigeon, light, and quick in their flight; the colour white, the covert feathers being curled, each feather forming a little curl; nor are the feathers of the neck so smooth as in other Pigeons. They have a fine turned crown. The iris is yellowish red. They are tame Pigeons, but do not breed very fast."

In the old treatise on Pigeons published by C. Barry (1765), the following notice occurs:—"The Frillback is something less than a Dagoon, and in shape like a common Runt; their colour generally, if not always, white; and

what is chiefly remarkable in them is the turn of the feathers, which appear as if every one distinctly had been raised at the extremity with a small, round, pointed instrument in such a manner as to form a small cavity in each of them."

The few that I have seen resembled a common white Dovehouse Pigeon with turned crown, clean feet, and having the peculiar curled, or as if it were goffered plumage.

VARIETY 2.—THE FRIESLAND RUNT (*Columba domestica Frisiæ*).

I have never seen any of this kind. Its plumage appears to resemble that of the Friesland or Frizzled fowl. All feathers have a convex and concave surface, the hollow side being turned towards the body of the bird, and by the pressure of the skin on the quills they are drawn close to the body: in this variety the natural order seems reversed. The only description of them I have met with is in J. Moore's work, 1735, which I transcribe.

"*The Friesland Runt*.—This Pigeon comes from Friesland, and is one of the larger sort of middle-sized Runts. Its feathers stand all reverted, and I can't see for what it can be admired except for its ugliness."

Tastes may differ, but I should think, if in full plumage, it could not be very unsightly; at least, I should prize it much for its novelty if I could obtain it.

VARIETY 3.—THE LACE OR SILKY PIGEON (*Columba setacea*).

French, PIGEON DE SOIE.

This unique variety is very scarce. The fibres of the feathers are all disunited, as in the plumage of the Japanese Silk fowls, which gives them a lacy or silky appearance, having more the look of hair than feathers, the filaments of the larger feathers hanging from the shafts like a fringe, which gives rise to their name. The few I have seen in England were not first-rate specimens of the sort, but bore much resemblance to inferior Fantails.

In the old treatise before alluded to the following description occurs:—

"*The Lace Pigeon*.—This bird is, I believe, originally bred in Holland, where I am informed there are great numbers of them, though not one that I know of to be seen in England at present (1765). It is in size rather less than a common Runt, and like it in shape, though I once saw a Shaker of this kind. Their colour is white, and they are valued on account of their scarcity and the peculiarity of their feathers, the fibres or web of which appear disunited from each other throughout their whole plumage, and not in the least connected, as in common with all other Pigeons, where they form a smooth, close feather."

I did not meet with any of this variety in Germany, nor any notice of it in German works on Pigeons; but I saw one stuffed specimen in a museum at Bonn. In France they appear to be better known, and I am informed there was a beautiful pen of them at the late Poultry Show at Paris. MM. Boitard and Corbie give the following description, which I will endeavour to translate. They class them with the Fantails, and describe two varieties.

"*Pigeon Trembleur Paon de Soie* (*Columba laticauda setacea*).—It resembles a Fantail in all except that it has the fibres of the feathers silky, separated, and hanging, like a fringe of silk or cotton, and consequently it is unable to fly. It is not very productive, and like the Fantail it is a very tame variety, and some amateurs breed it in their apartments. Its flesh has a flavour of game approaching that of river birds.

"*Pigeon Trembleur de la Guyane* (*Columba tremula Guianæ*).—This superb variety has the tail large and erected like the Fantail, and it is imported from Guiana, whence it receives the name. The ground of the plumage is white, the wings are blue, shaded with a kind of clearer hue, and the rows of bars black.

"All the breeds of little Pigeons crossed with the Silky Fantail produce Silky Pigeons in all their forms and colours; but above all, if one pairs this variety with a Pigeon that has black bars on the wings, they throw individuals that have the bar edges in various colours like unravelled fringes, which produce a very agreeable appearance."

The Silky Pigeons seem so intimately related to the Fan-

tails that I am doubtful if I ought not to have classed them with those Pigeons, as I am much inclined to consider one as a sub-variety of the other; but, being in want of proof, I preferred classing them among Pigeons of peculiar plumage.—B. P. BRENT.

MERTHYR TYDFIL POULTRY SHOW.

WE have often thought that in writing the Queen's speech the ministers must find the opening sentence of "My Lords and Gentlemen" the easiest part to compose. We waited some minutes after the above heading, and no bright idea struck us. Then we said to ourselves, "It is a Fruit and Flower Show as well; we will say something of them;" but that was out of our depth. "Then begin about the natural connection of these things." No, hang it, somebody wrote about that last week. "Do the classical—have a little sort of invocation." Who was the god or goddess of poultry? No one; and yet the ancients were lavish of deification. They had gods for everything, but they had no Poultry Shows. The gods themselves were, however, a little in the fancy. If history is to be believed Jove has his eagle, Juno her peacock, Minerva her owl, and Æsculapius a barn-door cock.

What a beautiful ride it is from Gloucester to Merthyr Tydfil! The splendid scenery, the curious sight of furnaces belching forth their roaring flames, and emitting their clouds of smoke in the midst of a landscape more lovely than the mind could conceive—the novelty of a mining district to one accustomed to our agricultural country—all made us enjoy our trip. In one thing we were disappointed. Although, as in Ingoldsby's words, we saw numbers of damsels whose

"Eyes were as bright as their milking-cans,"

we saw not one whose hat

"Was a beaver, and made like a man's."

To show the world we have an eye for something more than mere cocks and hens, and to convince our lady readers that we could, if necessary, do a little in the "fashion" reporting way, we will say, while speaking of the prevailing head-dresses, that hats are not worn. The bonnets are *small*; but, instead of being stuck on the back of the head, they are jammed down on the top, the front forming a *small* peak to keep the sun from the eyes.

Within these few years a great population has sprung up here—nearly 100,000 souls. It is natural to have pets, and having them the transition to a show is easy, because the innate feeling of emulation causes every man to wish to have the best, and the point can only be decided by open competition. A few gentlemen formed a Committee, and hence the Show which we will now steadily proceed to report.

"All men," says an old writer, "are alike; but they differ in height, in strength, in the colour of their hair." So we say all Poultry Shows are alike, only they differ in the quality of the birds shown. One thing may, however, be noted, that the question is now so well understood that the most popular breeds invariably present the best entries. Here, at a small Show of 140 pens, there were Spanish and Dorkings that would not disgrace any exhibition. Our venerable mother of shows, Birmingham, has set the order of precedence, and therefore *Spanish* came first. Mr. Crawshay's birds were excellent. In the *Coloured Dorkings* there were marvellous birds, and a pen made from the first two might confidently take its chance of success anywhere. No marvel; the first prize pen had already graduated at Birmingham and the Crystal Palace. The white *Cochin-Chinas* were good, but sufficient care had not been taken to discard green legs. The *Bufs* were a creditable display, but not equal to others recently shown. One pen of *Grouse* reminded us of the Rev. G. F. Hodson's. *Golden-spangled Hamburgs* were very good—the *Golden-pencilled* not equal to them. There must have been a strange infatuation about the *Silver-pencilled*—every pen but one was topknotted. Good news for the Dublin school! The *Black* and *Silver Polands* were good. The latter seemed akin to Mr. Coleridge's birds, and we believe this country is not unknown to him. The *Silver-pencilled* were very good, and if they are well lotted they will appear again in the prize-lists. There were some very good *Game fowls*. A cock in the first prizepen, the property of Mr. Crawshay, will, if well shown, be hard to beat in the single

cock classes wherever he may be shown. We were rejoiced to see some of the old English *Booted Bantams*. We have not for a long time seen such good birds, square, short-legged, speckled, and booted to the toe.

The Committee made a mistake in putting *Gold Pheasants* into the prize-list, being misled by those who will call Spangled Hamburgs Pheasant fowls. Their appeal was, however, answered, and a very fine pen of *real* Golden Pheasants, belonging to Mr. Crawshay, demanded and took a prize. The *Turkeys* were excellent. The Judge stated that he passed over excellent Ducks with regret, but if they are entered as Aylesburys they must have pale bills.

It was matter of regret to see the classes for workmen not filled up. They thought some superhuman exertion was required to take a prize. When they saw the simple nature of the affair they promised for the next Show. Let us hope they will keep their word. Mr. Baily was the Judge.

The Committee was all that could be desired, and Mr. Harris, as Secretary, deserves the thanks of all concerned.

VITALITY OF AN UNHATCHED CHICKEN.

SEEING in your number for August 18th an account of the vitality of an unhatched chick, I can relate a circumstance of a somewhat similar nature that occurred four years ago. An egg being left in the nest for some young pullets to lay to, in the course of time was hatched, and, having no particular mother, I brought the chick out and reared it by the fire. It was hatched in February in very cold weather, but with care and attention it reared well. It is now alive, and has produced many broods of chickens, and laid hundreds of eggs. It is a great pet and favourite.—JOHN HARTLEY, Great Crosby, Liverpool.

OUR LETTER BOX.

BANTAMS (J. C. H.).—The birds in question are in all probability Laced Bantams bred out, that is, they have, for lack of fresh blood, lost their lacing, and are going back to the birds from which Sebright Bantams were originally made. They may be, and doubtless are, pleasing and profitable birds; but they will never be valuable either to sell, exchange, or treat as a new variety.

CHARACTERISTICS OF POWTER PIGEONS AND EAST INDIAN DUCKS.—"What constitutes good East Indian Ducks? Should their legs be black or bronze, and their weight or size be taken into consideration? What is the price of a good pair of *Powter Pigeons*, what length should they measure, and how should they be marked? Could you not get up a 'Manual for the Many' on Pigeons?"—SOUTH LEICESTERSHIRE.

[The properties of good *East Indian Ducks* are perfectly black plumage showing great metallic lustre. They should be as small as possible. If the legs are quite black so much the better. We have never seen any. The bill of the Ducks should be black; that of the Drake has a greenish tinge. The properties of *Powter Pigeons* were described in No. 435 of THE COTTAGE GARDENER, January 27th, 1857. Seven inches may be considered a good fair length of leg. The price can hardly be fixed with any degree of precision, as so much depends on the pocket of the amateur, the necessity of the seller, the state of the fancy, or the goodness of the bird. From one guinea each and upwards may give some idea.]

YORKSHIRE POULTRY SHOW.—"We find in the report of the Yorkshire Show that Mrs. Sharp took the prize for the single Game cock. This is a mistake, as we took the prize, but the mistake arose from the birds having been put in the wrong pens; that is, when the birds were judged one bird was in Mrs. Sharp's pen, and her bird in ours. This arose from the Yorkshire Society having a method of receiving the birds without numbers. Of course the mistake was rectified as soon as found out. The cock that took the prize was a Duckwing, and the remainder were Reds."—BIRD AND BELDON.

FIVE-CLAWED COCHIN-CHINA (Amateur).—If the best pen of *Cochin-China* fowls in the world had one five-clawed bird in it it would be disqualified.

LONDON MARKETS.—AUGUST 31ST.

POULTRY.

There is but a moderate supply of poultry at market. Grouse are decidedly scarce.

Large fowls	5s. 0d. to 5s. 6d. each.	Grouse	.... 4s. 0d. to 4s. 6d. each.
Smaller do.	3s. 6d. to 4s. 0d. "	Pigeons	..... 8d. to 9d. "
Chickens..	2s. 0d. to 2s. 6d. "	Rabbits ..	1s. 4d. to 1s. 5d. "
Geese	6s. 0d. to 6s. 6d. "	Wild ditto	..... 8d. to 9d. "
Ducks	3s. 0d. to 3s. 6d. "	Leve	ts.... 3s. 0d. to 4s. 0d. "

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—September 1, 1857.

WEEKLY CALENDAR.

D M	D W	SEPTEMBER 8—14, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
8	TU	Strawberry Tree (<i>Arbutus</i>)	29.893—29.891	74—40	W.	—	25 a. 5	30 a. 6	7 53	20	2 29	251
9	W	Lobelia urens	29.877—29.788	72—52	S.E.	—	27	28	8 19	21	2 49	252
10	TH	Knawel (<i>Scleranthus</i>)	29.994—29.869	74—48	E.	—	29	25	8 59	22	3 10	253
11	F	Euphorbia paralias	30.140—30.089	72—47	N.E.	—	30	23	9 54	23	3 31	254
12	S	Hornwort (<i>Ceratophyllum</i>)	30.142—30.066	72—46	N.E.	11	32	21	11 6	24	3 51	255
13	SUN	14 SUNDAY AFTER TRINITY.	30.079—29.970	66—45	N.W.	—	33	18	morn.	25	4 12	256
14	M	Diplotaxis muralis	30.224—30.123	67—35	S.E.	—	35	16	0 28	26	4 33	257

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 76.5°, and 46.7°, respectively. The greatest heat, 84°, occurred on the 12th, in 1841; and the lowest cold, 28°, on the 13th, in 1855. During the period 106 days were fine, and on 90 rain fell.

NOTES ON NEW OR RARE PLANTS.

GARDENIA MALLEIFERA. Nat. ord., *Cinchonaceæ*.—Native of Sierra Leone, and introduced into this country by Mr. Whitefield about 1843. Stem four to five feet high, numerous branched. Leaves opposite, on short stout petioles, with interpetiolar stipules, ovato-lanceolate, acuminate; margins entire; surface smooth, very dark green. Flowers produced in the axils of the leaves. Calyx a short tube, deeply divided into five rigid subulate segments, persistent. Corolla tubular, from eight to nine inches long; limb campanulate, and divided into five broad obtusely ovate segments; white. The pistil forms a very prominent and distinctive feature in this species, as it is very large and shaped like the clapper of a bell.

This, although comparatively an old plant, is yet scarce in our collections. The only objection that can be raised against its extensive cultivation is the ephemeral character of its flowers; but its great beauty and the curious structure of its flowers certainly entitle it to more favourable notice. It thrives well treated in the usual way of stove Gardenias, that is, plenty of moisture and strong bottom heat when growing and starting into flower, with a well-drained compost of peat and loam.

THEOPHRASTA JUSSIEUI. Nat. ord., *Myrsineæ*.—Native of St. Domingo. Stem simple, rough, with short spines. Leaves about two feet long, obtusely lanceolate, very coriaceous, dark green; margins furnished with spines. Calyx tubular, divided into six acutely lanceolate lobes. Corolla tubular, divided into five short ovate lobes, cream-coloured outside, and dark coffee brown inside. Inflorescence a panicle, produced close to the stem in great profusion.

This is a magnificent plant, whether considered with respect to the foliage or the flowers. Its simple stem requires no branches to add to the symmetry of the plant, as the leaves, by their great length and rigid and evergreen nature, make quite an equivalent for the absence of branches. In these days of fine-foliaged plants this species can scarcely be valued enough. The compost should be peat and loam in nearly equal parts, with sand sufficient to make the whole free, and the drainage must be kept in the most perfect condition. It delights in a strong moist heat, especially when starting into bloom. Although an old plant it is very rare, chiefly because of the difficulty it offers to propagation otherwise than by seeds.

LOBELIA SPLENDENS, var. IGNEA. Nat. ord., *Lobeliaceæ*.—Native of Mexico. Stem herbaceous, from two to three feet high, dark purple. Leaves sessile, lanceolate; margins serrate, about seven inches long, very dark purple, glabrous. Inflorescence an elongated terminal raceme, with numerous bracts. Calyx of five subulate segments; dark red. Corolla five-lobed, the two upper erect, lanceolate, and the three lower ovate and spreading; bright scarlet.

This beautiful species, although old in cultivation, is

yet rare on account of its having been lost for many years. It is quite hardy in the locality of London, only requiring the protection of a coating of coal ashes over the roots during the winter. The fine scarlet of the flowers contrasts admirably with the dark purple of the leaves, and its flowering season occurring at a time when flowering plants are scarce in the herbaceous ground makes it a plant of no ordinary value. It blooms from the beginning of August till far through September. It should have a place in every collection of choice herbaceous plants.

ILLIARIA CANARINOIDES. Nat. ord., *Loasaceæ*.—Native of Central America, and brought into cultivation by Mr. Linden, of Brussels, and bloomed by him last year. It was received into Britain last year and flowered in the present. Stem climbing, numerous branched, well furnished with slightly stinging hairs. Leaves opposite, cordato-lanceolate, divided into irregular lobes, coarsely dentate; veins reticulated and very prominent, thickly clothed with asperate hairs. Flowers axillary, on long pendent peduncles. Calyx deeply divided into five leafy segments; margins dentate, boldly veined, acuminate, woolly, dark green, reflexed. Corolla of ten petals in two rows, the outer row oblong, acuminate, somewhat membranous, marked with brownish-coloured reticulated veins, buff-coloured; the inner row much smaller than the outer, hooded, truncate at the apex, yellow. Stamens numerous, and produced in bundles opposite the five outer petals.

This is quite a new genus, and the above named the only species it is yet known to contain. It is beautiful, and very distinct from any other genus of the order in cultivation. Apparently it will not ripen seeds in this country, but it can be propagated by cuttings and kept over winter in a well-protected frame. Trained to a pillar or trellis it is an interesting object, and blooms profusely throughout the summer.—S. G. W., *Royal Gardens, Kew*.

STUD HOUSE, HAMPTON COURT.

THIS time last year I was called out of Suffolk to attend a council on Scottish affairs at this place, that being my first visit there. It struck me then as an unhealthy place to live in, being on nearly a dead flat not many inches above the tide mark, and covered with timber trees, shrubs, and underwood as thickly as they could grow together. The main walk round the pleasure ground was a mere leafy tunnel, where a "breath of air" could not be had on a calm day without a vigorous effort of the lungs, &c. Since then, however, a strong and continued pull on the purse strings of the Marquis of Breadalbane has converted all that into one of the healthiest spots and the most enjoyable country "box" within fifty miles of London.

Mr. Kidd, the *factotum* at the place, went to work with his sappers and miners, and cleared all before him in the true landscape style, and all that remains of the

former wilderness are such groups of evergreen Oaks and single specimens of fine Hollies and Cedars of Lebanon as happened to stand in the right positions for heightening the landscape character of the surrounding parts. He then converted the surface into a velvety, undulating lawn, from which distant views to the south and south-west are now obtained, which "views" must have been opened through the plantings of the park when the Stud House was first planned.

Any landed proprietor who knew the place before this "mucking of Geordy's byre" may learn a useful lesson in improving the immediate neighbourhood of a country residence. The first thing he has to do is to get hold of a competent practical man to conduct his operations, a man in whom he can put implicit confidence, allow him a good round sum of money, and then leave that man to his own devices. It is not in flesh and blood to stand by quietly and see hosts of full-grown trees being pulled down close to one's own house and castle without let or hinderance; therefore to be far away from the scene of these operations is the wisest course to adopt for one who really desires improvements on an old established place.

Sir Joseph Paxton or Sir Charles Barry, or any other great artist in that line, could tell that the love of trees is so deeply rooted in the country mind that it is next to impossible to improve an old country seat if the owner has a finger in the pie; and great artists do not like to have their names associated with half-and-quarter measures. Far better, therefore, not to employ them at all if they are not allowed to do things according to the rules of their art. But, in addition to all that, there is this to be added—when the work of improvement is inside the pleasure ground, and flower gardening is to form part of the improvements, there is not one landscape gardener out of fifty who is able to plan a flower garden which will suit the modern style of planting them. They can trace you all styles of fancy patterns with the ease of ready writers; but, as far as I know, the whole art of planning flower gardens suitable for the present styles of bedding-out plants is in the hands of a few practical gardeners, and only a few of them. Mr. Kidd is one of the number, and he has planned, made, and planted a very neat and very suitable flower garden here since I last called. All his beds were brimful, without a single failure at the first start—a rare thing in flower gardening. His bed of *Petunia Countess of Ellesmere* was very good, but the deep purple is too heavy, and the eye is not large enough or white enough to give the full characters of a *Shrubland Rose* *Petunia* bed; but it is a better indoor plant than the parent. A bed of *Jackson's Variegated Nosegay* Geranium shows that kind to be the freest grower of all the variegated sorts, and the new bed was, if anything, too rich for it; yet it is a most useful tint, a reddish pink, and makes a fine bed. Another bed was of a kind of small-leaf Geranium, in the way of *Shrubland Pet*, which I never saw before. All the rest are of the well-known kinds.

In front of the lawn, but hid from it by a swell made in the ground, runs a long border by the boundary fence, and, passing an "arbour" archway, it goes on the whole length of the kitchen garden, which is five acres in extent. The whole length is as straight as an arrow, and nearly on a level, and I know not how many hundred yards long; but the whole border is planted ribbon fashion, that is, in straight rows, and one or two kinds of plants in a row, the back and tallest row being the only one which has more than one plant; but I did not make notes this time. A row of *Calceolaria corymbosa*, the scarcest of the good old yellow ones, was particularly showy, as was *Flower of the Day*; but the old *Scarlet Variegated*, the shot-silk bedding kind, shows itself here to be by far the most effective of that class (the variegated class) for a ribbon line.

I never told the secret of the shot-silk bed; but the Marchioness of Breadalbane found it out here with this row, and gave special instructions as to how that kind and *Lucidum*, which is here also, are to be used for the purpose of relieving the monotony of the globe-headed common Geraniums.

The secret is in the loose or Nosegay shape of these kinds, giving light and shade in the sun and wind, shot-silk fashion. We should not be far wrong, therefore, if we were to assign the reason for the present run for Nosegays, and the origin of a new taste in flower bedding, to the "shot-silk bed" itself.

There is a strong scarlet Geranium here as old, perhaps, as George III., and I am now quite sure this kind was the mother of the *Shrubland Scarlet*, alias *Smith's Emperor*. I fashed my brains long enough to little purpose trying to guess which could be the father or mother of that celebrated scarlet, and here it is at last. It beds, pots, and rows as well as any of the race, and Mr. Kidd has so much of it and of *Tom Thumbs* that he is not going to make a single cutting of the race this autumn. The marquis and his family being in the Highlands, Mr. Kidd can take up his old plants long before the frost, dry them very gradually, if not ripen them, in the lofts and stables, not cut an inch off them till the spring, merely stripping the leaves off, and he will store them in the stalls of the once royal stud. Here he has sufficient storage room for all the Geraniums at Hampton Court, Kew, and the Crystal Palace. He says if you harden them off in time and do not crowd them they will keep in the dark among hay full four months, and that cutting them in the spring for cuttings does no harm if the old stools are not excited till the wounds dry "of themselves." Mr. Ferguson, of Stowe, warned us of the danger of cutting store Geraniums in the spring, and I can say "truth is here" to his story.

The two conservatories were gay with the usual summer flowers, and a great number of Azaleas, Rhododendrons, Camellias, Epacrises, and all the best spring and early summer flowers were basking in the sun here and there out of doors; and Fuchsias, for which Mr. Kidd has been long celebrated, promise to "come out" next year. They are good as they are, but nothing extra this first season; but the wonder is how they could have any pot plants so soon.

The five acres of kitchen garden form a grand model, a perfect pattern for the London market gardeners, and a new school for nineteen out of twenty of the very best of them. If any one should doubt my words let him go down and see. Give my compliments to Mr. Kidd, and tell him to show his Tomatoes to begin with; ask him how he can grow them in the open borders south and west, without a wall behind, better than the French ones in Covent Garden, and full ripe the first week in August; then ask him how many waggon loads he grows of them in the twelve months; ask, also, if it is right and proper, or at all possible, to cut them fresh and fresh every day in the year like Cucumbers; ask, also, to be shown the wall trees not eighteen months from the nursery in full bearing; ask if it be right to cut down maiden Peach trees; and, if you doubt him, go to Chiswick, and ask the "spirit of the age" whether I am romancing or merely reporting. D. BEATON.

ADDENDA TO GLEANINGS FROM BASING PARK.

(Continued from page 277.)

THE very title of gleanings, with the reasons assigned for not giving a general description, and the almost purely practical character of the deductions, together with the fact that I took no notes to assist my memory,

are the only replies I consider it necessary to give to several suggestions, such as that I might have noticed the position of the mansion; the scenery around it; the undulated character of the ground through which the approaches wind, and of which full advantage has been taken; the picturesque style of the park, heightened by groups of undergrowth, such as furze, &c.; the pretty peeps of such scenery from the flower gardens, each of which is centred with a basin and fountain, the supply of water for which and also for the mansion is brought from a depth of 387 feet below the surface; the enormous, singular, and grotesque Yew in the churchyard at Privett; the pretty parsonage house, which I looked upon as only one among the many proofs of the munificent liberality of the worthy proprietor; and a beautiful avenue of Cypress that branched off to this church, formed of *Cupressus Goveniana* and *macrocarpa*, backed by *Pinus insignis*, &c.

Again, to a mass of such inquiries as, What is the width of the approaches, and what their depth of gravel? and are they, and how are they, bottomed with rough material? What preparations were made, and what compost was used, for the avenues of Deodar and Araucaria? What is the size of the flower gardens, what their form, and how managed so as to introduce the fine specimens of evergreens, and thus to produce the effect specified? What is the depth of the soil in the orchard house, and are the roots prevented getting down, or what means are used to keep them near the surface so as to secure stubby and healthy growth? What are the sizes of the pots most used for growing fruiting plants of the various stone fruits in? and are they kept on a hard surface, or are the roots allowed to run through the pot, or are the pots partly plunged? and, if so, how are the roots used, and what becomes of them when it is necessary to move the pots, &c.? These are but a sample of the questions that have been put, and which, I am sorry to say, can only be satisfactorily solved by another visit at a future time from myself, or by one better qualified to give the subjects full justice, or, better still, by receiving a condensed report from Mr. Duncan himself when the long evenings leave him a little leisure from his multitudinous duties.

The *addenda* I mean to allude to have reference to omissions, &c., respecting some of the points I noticed at the page referred to, and which are calculated, I imagine, to give practical hints to our readers.

APPROACHES.—These from lodge to lodge are more than three miles in length. On the sides of that from the Alton road, in addition to the general picturesque effect and a number of fine, lofty specimens of Silver Firs, are a number of groups of Scotch Fir, each consisting of four or five trees planted so closely together as to give the group a spreading-like, Cedar of Lebanon character. This idea would be worthy of adoption in many places. I omitted to mention that the Araucaria and Deodar avenue from the Winchester road extends for more than a mile; that the varied scenery from that approach, over a rich, undulated valley, is very striking, with the famous South Downs and their grassy summits breaking the sky outline; that for a considerable distance on each side of the lodge, in addition to the lines of Araucaria and Deodar, there are also lines behind them of Cryptomeria, Silver Cedar of Mount Atlas, and *Douglasii*; and yet, striking as the effect of this a few years hence must be, I have omitted to mention one fact especially gratifying to the eye of a painter, to every lover of variety, and, after the first expense, to every admirer of economy. The whole ground between these avenues, instead of being mown, is carpeted with the common Laurel, which will be allowed to grow from two to three feet in height. Even their shining green would produce a monotony, and therefore groups of Aucubas, Laurestinuses, Mahonias, Double Furzes, &c.,

are introduced, which will break the monotony of undergrowth foliage, and, as these again will be allowed to attain different heights above the Laurels, the whole of the undergrowth will present a varied, picturesque, light, airy appearance.

EVERGREEN GARDEN.—Mr. Duncan informed me that this had given more impetus to forming a taste for beautiful trees and shrubs than anything else he had known. I mentioned the beautiful winding walks crossing each other nearly at right angles, a raised circle being formed at each point of junction, and having a fine specimen in its centre. I ought also to have stated that the various sweeps of the walks, and the spaces inclosed between them, were evidently made on a system of forethought and consideration as to the tribe of evergreens destined for each of these separate sections and divisions. Thus several of these were devoted to Pinus, two to Abies, one to Picea, one respectively to *Quercus ilex*, Cedrus, Taxus, Ilex, Juniperus, Cupressus, Thuja, Cotoneaster, Alaternus, &c., and arranged so as to produce a varied and picturesque effect, and yet secure a systematic, scientific character. Every evergreen plant that will stand the climate finds a home here, and all are nicely labelled on galvanised labels, the botanic and popular name being written in clear but different type. I mentioned, at page 275, how the ground was carpeted. This is chiefly done with Laurels in the centre, margined with *Berberis aquifolia*, and monotony prevented by dotted groups of Furze and plants of variegated Holly, Aucuba, Laurestinus, and even climbing Roses allowed to ramble somewhat wildly. The Laurels, &c., will be kept just so low as, in connection with the inclinations of the ground between the walks, will prevent one walk being seen from another, a matter of great importance in garden scenery; and care will be taken that, however varied the carpeting so as to produce variety and light airiness of character, it will never be allowed to obtrude on the main specimens. This carpeting with evergreens, and yet securing variety of undergrowth, is a striking feature at Basing Park, and well worthy of consideration. Most of the grumblings about expenses amongst the employers of gardeners arise not so much from a first outlay, or the getting a few new things, but from the continuous drain from a never-ceasing use of the scythe from April to November.

FLOWER GARDENS: FOUNTAINS.—I have incidentally noticed the fountain in the centre of each. I omitted noticing them at page 275. Even a pool of water is a pleasant object. It softens and mellows all in connection with it. The spray from a fountain is delightful to the eye; the sound of its dropping, though unseen, is soothing melody to the ear. Who has not felt its lulling power as, on a bank of Daisies reclining, he builds airy castles, traverses fairy-land, and gets into regions of bliss, which he never sees amid the bustle and anxieties of public life? Men have slept soundly amid the battering welding of huge coppers and steam engines, and waked directly the hammering ceased. Just so here. Let the water stop its dropping, lulling sound, and your elysium is at once changed to a very ordinary bank, with its fair complement of ants, hornets, and wasps' nests. To be thoroughly satisfactory fountains in a garden must throw out their water almost continuously. The position, also, should be such that the water may appear to come naturally from the surrounding heights. Hence the interest of the fountains and cascades at the Palace of the Peak (Chatsworth). The limpid current rolls down the hill; you know there is a lake reservoir on its summit; you see the huge pipe that supplies the Emperor fountain, and there is the beautiful Derwent below to receive the overflow. Place such a fountain on elevated ground, and supply it by means of force pumps, horse power, or steam engines, and the poetry and fitness of all are gone. I admired the basins in

building. The only fault I could see in it is its extreme narrowness compared with its height and length. Besides the appearance being faulty, the space for plants is very much confined; in fact, there will be, when the plants are fully grown, only room for a single row in the centre bed, and small things on the side of the walk next the glass. There is a fine opportunity and space to display a collection of greenhouse climbers: a considerable number are already reaching the top part of the roof. When that is covered and the fountain playing I anticipate the interior will be a pleasing shade and a cool atmosphere even in summer. The plants in the centre bed consisted chiefly of Camellias, Orange trees, Acacias, Myrtles, and good plants of the rare *Weinmannia trichosperma* and *Lomatia ferruginea*.

The space in front of this handsome winter garden is laid out in the Italian style of flower gardening. In the centre is an oval basin of clear water, surrounded with a dense, broad mass of the pretty *Saponaria Calabrica*; the rest of the space in angular and circular beds edged with stone, and filled with the usual bedding-out plants. I noted two Verbenas as being novel and pretty, namely, *Mrs. Holford*, the best of all whites, having large pips, a good flat truss, and the purest of whites in colour. It will banish all the rest in a very short time. The other was named *Impératrice Elizabeth*, a close, creeping variety, with reddish purple stripes on a white ground. For a small bed I have not seen any that will surpass this variety.

In front of this flower garden is a handsome broad terrace walk overlooking the bush fruit garden, striking one at once that that space of ground ought to be a flower garden also, especially when it is known that a new kitchen garden is forming at a distance from these terraces.

The lawn in front of the house is of some extent; it is bounded at one point with some old-fashioned clipped hedges, which ought to be swept away; but I understand they are highly valued by Mr. Barrow, because they were planted by his mother, so it would be an unfeeling act to cut them down. Some large Box trees have been planted to take away partly their formality. Behind these hedges is a beddery laid out with Box edgings and narrow gravel walks. A general walk leads through these, and, turning a corner, leads into a walk arched over and planted with climbing Roses. This is, in fact, the principal walk to the winter garden and terrace gardens.

At the risk of being thought tedious and prolix I have tried to give the reader an idea of this charming place, to form which, and bring it to its present state, Mr. Barrow must have spent a considerable sum. He must, however, be much gratified with the result, and I will prophesy, if he is spared to see the plants grown to perfection, he will not regret the outlay. I shall conclude by saying that the place is not exclusive; any respectable party may see it at proper hours, and no one will be more proud to show it than the worthy gardener, Mr. Petch. The nearest station to stop at is Staveley. It is on the Midland line of railway. Ringwood Hall is a mile from Staveley, and three miles from Chesterfield. There are no conveyances to be had at Staveley, but plenty at Chesterfield, so that invalids and ladies who wish to visit Ringwood had better stop at the latter-named place.

T. APPLEBY.

POMOLOGICAL NOTES.

THROUGH the kindness of Mr. Rivers, of the Nurseries, Sawbridgeworth, we are enabled to make our readers acquainted with the following novelties, which we can with confidence recommend as valuable additions even to the

already very numerous varieties of fruits already in cultivation. Some years ago we had to wait for the greater part of a lifetime before we could know the merits of a new fruit; but, since Mr. Rivers has so devotedly applied himself to the cultivation of fruit trees in pots, he has succeeded in arriving at facts which otherwise he could not ascertain in so short a period of time. As a method for proving the correctness of their stock, or of becoming acquainted with the character and merits of a new or unknown fruit, nurserymen will find no method equal to pot growing, and they would do well to practise it. Among the numerous novelties we saw at Sawbridgeworth we noted the following:—

CRAWFORD'S EARLY PEACH.—This is a very large melting Peach. One specimen we measured was ten inches and a quarter in circumference. It is of a roundish and slightly oblate shape, depressed at the crown, from which issues a rather shallow suture, which is much higher on one side than the other. The skin is thin, of a deep lemon colour, but on the side next the sun it has a reddish orange blush, strewn with numerous, distinct, dark crimson dots. Flesh yellow, reddish at the stone, from which it separates freely; very tender and melting, remarkably succulent, with a delicious saccharine and vinous juice.

This is, without exception, the finest Peach we ever tasted. It seems to belong to the Rosanna or Alberge race, having a good deal of their yellow-coloured skin and flesh. Its size is also a great recommendation; but were it half the size it is we should say it is still the Peach most worthy of cultivation. It is as superior in flavour to all other Peaches as the Stanwick Nectarine is superior to all other Nectarines. The tree produces small flowers, and the leaves have globose glands. It is of American origin, whence Mr. Rivers imported it, and was raised by a Mr. Crawford, of Middletown, New Jersey. The fruit was taken from a tree growing in a pot, and ripened in one of Mr. Rivers' orchard houses.

ABEC PEACH.—This fruit is of a medium size and roundish, pitted at the apex, one side of which is higher than the other, and with a shallow suture, which is also higher on one side. The skin is remarkably thin and tender, perhaps more so than that of any other Peach, of a lemon-yellow colour, with crimson dots on the shaded side, but covered with a crimson cheek and darker dots of the same colour on the side exposed to the sun. Flesh white, with a very slight tinge of red next the stone, from which it separates very freely; remarkably tender and melting, sweet, and with somewhat of a Strawberry flavour.

This, also, is a very fine and an early Peach, quite distinct from any other already in cultivation. It ripens in the second and third week in August in the orchard house. The tree has large flowers, and globose glands on the leaves.

EARLY GROSSE MIGNONNE PEACH.—This is a medium-sized fruit, roundish, pitted at the apex, with a small nipple on one side of it, and with a shallow suture. The skin has a pale red cheek on the side exposed to the sun, and is thickly dotted all over with bright crimson dots. The flesh is white, with veins of red throughout, separating freely from the stone; sweet, very juicy, and vinous.

This is a very fine Peach, ripening in the orchard house in the second week in August.

The tree has large flowers, and the leaves globose glands; hence it belongs to the same race as the old Grosse Mignonne, of which it is an early variety.

PUCELLE DE MALINES PEACH.—Fruit medium-sized, roundish. Skin yellowish white on the shaded side, with a few crimson dots, but with a rather dark red cheek on the side next to the sun, and covered with dark crimson dots. The flesh is very tender and melting, separating freely from the stone; sweet, vinous, and finely flavoured. Ripens in the orchard house in the third and last week in August.

The tree has large flowers, and the leaves are without glands, and therefore it belongs to the Noblesse and Malta race.

COOLEDGE'S FAVOURITE PEACH.—The fruit is medium-sized, roundish, with a well-defined suture, which is most marked towards the apex, and rather higher on one side than the other. The skin is white, covered with crimson dots, and with a crimson cheek on the side next the sun. The flesh is very tender and melting, separating freely from the stone, juicy and sweet, and with a fine delicate flavour.

This is a very fine Peach. Ripens in the orchard house in the third and last week in August.

The tree produces large flowers, and the leaves have globose glands.

CLUB-ROOT OR AMBURY IN CABBAGES.

IN some districts certain complaints prevail even amongst the human family to a greater extent than they do in others. The agues and fevers of our lowlands are but little known in the hilly districts, while these last named are not without their peculiar evils. In like manner vegetation is subject to some disease in one place which is all but unknown in another. The mildew on the Vine, which some years ago was so destructive in the south-eastern counties, has scarcely yet reached the opposite extremity of the kingdom, and I believe there are counties which have not yet been visited by the Potato disease. These anomalies make us liable to look with unconcern on the evils which our distant neighbours may be suffering from, especially if we have a slight knowledge of the complaint, or rather, only suffer from it in a slight degree. The slug, wireworm, caterpillar, mildew, and other evils are seldom all seen in quantity at once, and certain situations are more subject to one or more of these evils than others, and consequently the means used to remedy the evil are often of a more stringent character. The farmer in the midland counties dresses his wheat in April and May to counteract mildew, using soot as his specific with good effect. The hop grower is, however, not always so successful in dressing his favourite production with sulphur to effect the same object; and sulphur, lime, and other things have been sown with Turnip seed as a preventive to the fly. These introductory remarks I have made in consequence of having received a complaint from a correspondent, "A. B. C.," of the destructive effects of club-root in Cabbages, which he says has destroyed his whole crop the past season in spite of dressings of lime, soda, and potash. This is truly unfortunate, yet quite likely, as the disease, under the name of ambury, fingers and toes, club-root, and sundry others, is very destructive in places if not checked. It arises from a weevil boring the stem of the plant a little below the surface of the ground, and depositing therein its eggs, which swell out the part affected into a sort of hollow tumour as large as a Turnip Radish. This ugly excrescence commencing its growth on one side often grows and surrounds the stem of the plant, which in consequence languishes and dies. The evil often commences in the seed-bed before the plants are large enough to plant out, in which case a remedy is difficult to apply; but a partial one is to prepare another bed in which soot or charcoal ashes have been liberally worked in, and on that to plant out the little seedlings, after carefully examining them, and nipping off with the finger and thumb any little bumps or excrescences that appear about the place where the club-root usually shows itself. Dusting a little soot or lime into the wounded part to cauterise it will likewise be of service in killing the grub, which, however, seldom survives the removal of its covering. This is the only cure for the disease that I am aware of; but as a preventive charcoal powder certainly stand pre-eminent; but when these cannot be had it is likely that soot or wood ashes may be serviceable. As it does not appear that lime and certain salts have much effect on this evil other remedies may be tried. I may, however, confess that I have not experienced any serious effects from this insect for several years, and am, perhaps, not likely to do so here; but I have seen it bad enough, and generally charcoal powder had a good effect. Our correspondent mentions his using manure liberally, which no doubt increases the evil; but that

ought to be corrected by the remedies above mentioned. One other preventive, and that an important one, we must not omit mentioning, and that is frequent digging or trenching whenever the ground is vacant, as all insects more or less bury themselves in the earth at certain seasons, and being disturbed at these times is often death to them, consequently digging in very hot or in sharp, frosty weather is alike destructive to them and beneficial to the ground. Ridging, digging, or trenching cannot, therefore, be too strongly recommended, especially on such soils as the club-root weevil, slugs, wireworm, and other enemies abound, as the scorching sun or pinching frosts are fatal to insects at a certain period of their existence, while outward dressings of the plant have but little effect on those suffering from club-root, although it may be of the utmost importance in cases of mildew.

J. ROBSON.

CUTTINGS OF THE HOLLY-LEAVED BERBERRY.

THE most curious thing in gardening that I have seen or heard of for the last twenty years is about this, the now common evergreen Berberry (*Berberis aquifolia*).

I recollect when it was sold at more than one guinea an inch, a five-guinea plant not being over four inches long in the stem; but now it would pay as well as the Larch to sell it for ninepence or a shilling the thousand—that is, at the end of the first season's growth. A friend of mine, a very good practical gardener near London, to whom a quantity of three or four-year-old plants of this *Berberis* were sent from the Experimental Garden three years since, told me "all about them" the other day. Many of them lost their leaves next May after planting, but in July following the top of the shoots started and made a fair growth. Next season they did very well alone, but the bare parts below which lost the leaves did not make a leaf, and were not likely to do so; therefore, about this time two years since, or a little later, my friend, finding a sufficient number of bottom shoots to his *Berberis*, determined to get rid of the bare parts altogether, and so cut down the plants, and made a dashing experiment by way of paying for the Experimental plants. Indeed, he thinks that I am, or rather, we of the Experimental are more than paid by the truth of the following novelty, namely, the top parts of the *Berberis aquifolia* were made into cuttings, with one joint of last growth, or last season's growth, in the very old style, to each cutting; they were planted just like common Laurel cuttings in the open air, and every one of them rooted just as freely as the common Laurels would. Therefore, instead of cutting down the verges of this Berberry by the sides of the carriage drive up to and round the "coach ring" at the Experimental Garden at the end of May, we shall cut them in September, and put in the cuttings.—D. BEATON.

ORIGINAL DOMESTIC RECEIPTS.

COMMON SOFT GINGER-BREAD.—One cup of molasses, one cup of sour cream, one tea-spoonful and a half of ginger, one heaping tea-spoonful of saleratus, three cups of flour, a little salt. Bake in a moderately-heated oven.

PLAIN RICE PUDDING.—Swell a tea-cupful of rice in a quart of boiling water; add a cup of sugar, three quarts of milk, and a little salt. Bake three hours.

TO TAKE GREASE FROM CLOTHES.—Lay the article on a linen towel, pour a little spirits of turpentine on a cloth, and rub it until quite dry. This will not injure the most delicate colours.

TO CLEAN FLOORS AND ERASE GREASE SPOTS.—To a pailful of hot soapsuds take three table-spoonfuls of spirits of turpentine, and you will have a clean floor.

TO REMOVE NEW FRUIT STAINS.—Hold the cloth tightly over some vessel, and pour boiling water through it, and they will soon disappear.

QUERCUS AGRIFOLIA.

A FEW miserable living plants of this species were sent home by Hartweg from California, and are now beginning to grow in the Society's garden. It will probably be a hardy evergreen tree, concerning which Nuttall, who knew it in its native country, has the following remarks:—

"This species, almost the only one which attains the magnitude of a tree in Upper California, is abundantly dispersed over the plain on which St. Barbara is situated, and, being

evergreen, forms a conspicuous and predominant feature in the vegetation of this remote and singular part of the Western world. It appears more sparingly around Monterey, and scarcely extends on the north as far as the line of the Oregon territory. It attains the height of about forty or fifty feet, with a diameter rarely exceeding eighteen inches; the bark is nearly as rough as in the Red Oak. The wood, hard and brittle and reddish, is used only for purposes of fuel, or the coarse construction of log-cabins.

"As an ornamental tree for the south of Europe or the warmer States of the Union, we may recommend this species. It forms a roundish summit, and spreads but little till it attains a considerable age. As a hedge it would form a very close shelter, and the leaves, evergreen and nearly as prickly as a Holly, would render it almost impervious to most animals. The leaves vary from roundish ovate to elliptic, and are of a thick rigid consistence; the serratures are quite sharp; the young shoots are covered more or less with stellate hairs, and for some time tufts of this kind of down remain on the under side of the midrib of the leaves, which are, however, at length perfectly smooth, and of a dark green above, often tinged with brownish yellow beneath. The stamiferous flowers are very abundant, and rather conspicuous; the racemes the length of three or four inches; the flowers with a conspicuous calyx and eight or ten stamens; the female or fruit-bearing flowers are usually in pairs in the axils, or juncture of the leaf with the stem, and sessile, or without stalks. The cup of the acorn is hemispherical, and furnished with loose brownish scales; the acorn, much longer than the cup, is ovate and pointed.

"We do not recollect to have seen this tree properly associated with any other, except occasionally the *Platanus racemosa*; their shade is hostile to almost every kind of undergrowth.

"By Persoon this species is said to have been found on the eastern coast of North America, while Pursh attributes it to the north-west coast, about Nootka Sound. It does not, however, extend even to the territory of Oregon, as far as my observation goes."

Née says, "I have only seen branches collected at Monterey and Nootka. The leaves of the young plants are perfectly smooth when first developed, of a thin consistence, with numerous, slender, sharp dentures beneath; they are of a brownish yellow colour, and appear smooth and shining."

The long narrow acorns, almost conical, are a remarkable feature in the species.—(*Horticultural Society's Journal*.)



Quercus agrifolia.

ON THE CULTIVATION OF CELERY.

By JAMES DUNCAN, C.M.H.S., Gardener to Joseph Martineau, Esq., F.H.S., Basing Park, Alton.

To cultivate the same area of ground for any lengthened period, so as to produce in tolerable perfection the varieties of vegetables usually grown for the consumption of a family, requires the adoption of a well-regulated system, by which not only a proper rotation of crops can be maintained, but it is also essential as a means of successful cultivation that the earth be well pulverised and aerated as often as the nature of the several crops will admit of it; and, when the soil is

of an obstinate or sterile character, the necessity for this will be the more readily apparent. In all farm operations the value of a proper rotation of crops is fully recognised and acted on—how much more necessary then is such a system in garden practice, where the nature of the crops cultivated assimilates so very closely! And as the Turnip crop forms the basis of the field system of cultivation, so, in like manner, I have chosen the Celery crop as that on

which to found my gardening routine, because, by the particular mode I adopt in the cultivation of this vegetable, the greatest scope is given for a thorough turning and aëration of the soil, exposing it alike to the winter's frosts and the summer's sun, by which the most obdurate and sterile staple becomes friable, and consequently better fitted for all general purposes of culture.

In the month of June the Broccoli and Cauliflower section of the *Brassica* family is planted, and so arranged that the Celery trenches for the next season's crop may be formed as soon as the Cauliflowers have perfected their growth, and in this operation the mould is placed among the stems of the Broccoli, which, with after covering, effectually protects them from the severity of the winter; and when the ground is in

a condition to require draining, these trenches afford a ready means for the performance of the operation. The manure is placed in the trenches during winter, whereby an advantage is gained in having this kind of work performed at a less busy season than early spring or summer. But the plan also affords space for the production of early esculents. For the kinds that require a rich medium for perfect development, or such as Sea-kale or Rhubarb, which need, in addition to a slight bottom heat, an extra accumulation of matter as a means by which to blanch the stalks of the leaves, the situation is equally appropriate. The trenches form, too, a ready receptacle for such plants as are required for the summer decoration of the *parterre*. Cuttings struck in hotbeds in early spring, or plants which have been kept

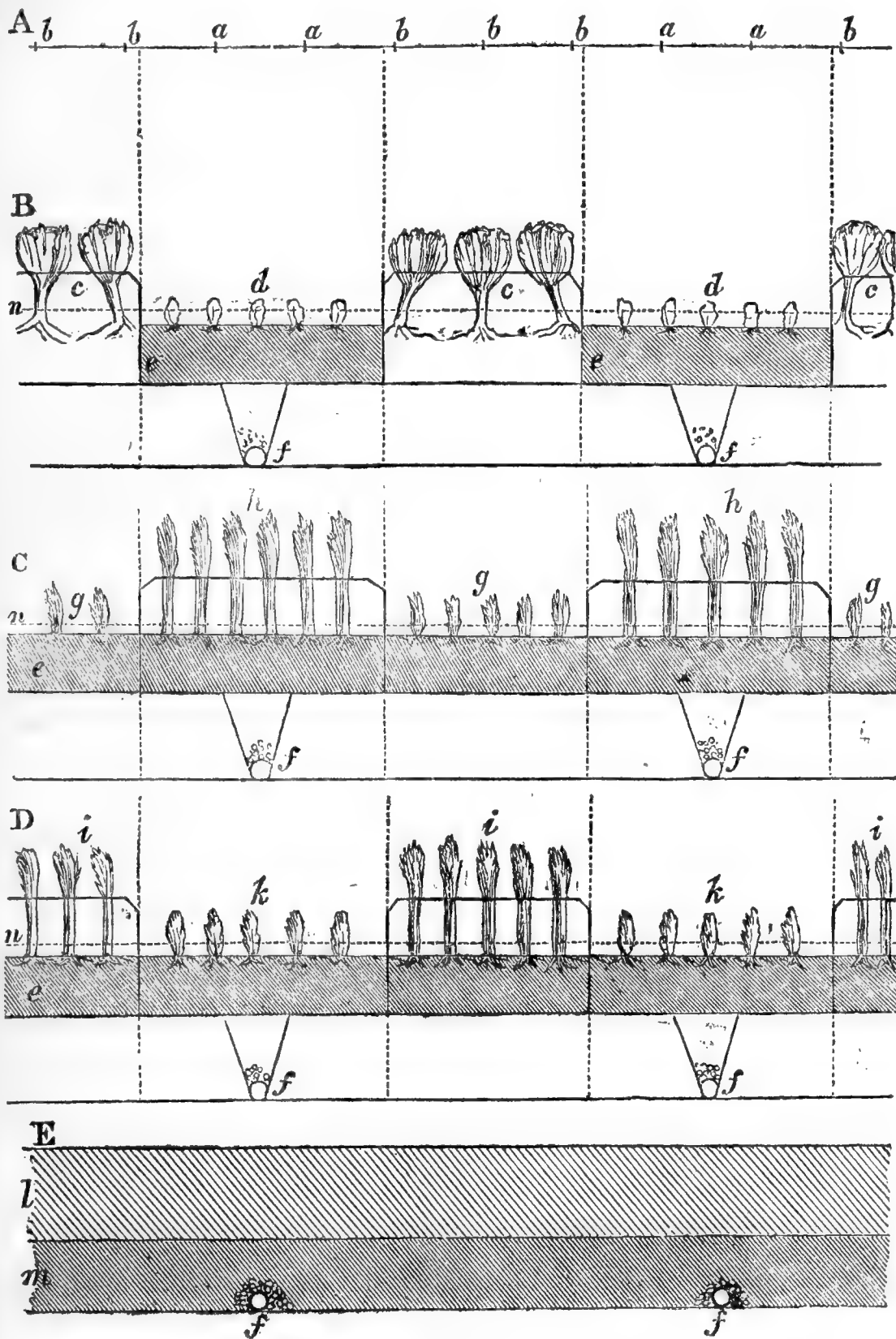
in crowded places during the depth of winter, planted on these gently warm beds towards the end of March, and protected from frosts by glass or other covering, soon become strong and well rooted, and are moved with much facility to their proper situations when the planting season has arrived. After the Broccoli has been removed the ridges are also available for crops of such vegetables as Spinach, Lettuce, Peas, Radishes, &c., the only conditions necessary being that they should be cleared from the ground previous to earthing the successional crops of Celery as they require it.

The annexed diagram, representing a course of Celery culture, will probably convey a more accurate idea of the system, pursued than any mere description, however elaborate.

The object I seek to attain in the cultivation of this useful esculent is sticks of a medium size, crisp, solid, and perfectly blanched, that being the description of Celery most useful for every edible purpose, and which I produce by planting somewhat closely on a bed of very rich material, kept in a tolerably moist condition by being frequently saturated with liquid manure. Blanching under such circumstances is readily accomplished by ordinary means.

The kinds of Celery I cultivate are those which have usually been obtained from the shops under the names of Manchester, Seymour's, and Cole's, all of which I consider may be classed, according to colour, with the solid red and solid white. The only distinct varieties which have come under my notice are the Italian or upright, the curled, the variegated, and possibly the *Celeri Turc*. I am aware that in the neighbourhood of some of the large manufacturing towns the artisans cultivate Celery with considerable care, and that they boast of possessing several sorts of celebrity; their names, however, are so purely local as to induce the belief, that, as at Manchester and other places, cultivation under very favourable circumstances has been alone the means of producing these monster growths we sometimes hear of.

I raise the plants from successive sowings, made respectively in the first and last weeks of February, the second week in March, and finally in the first week in April; the first two crops are raised in well-drained fourteen-inch pots, placed near the glass in a hotbed, or other warm situation. When the plants are sufficiently large they are pricked out on a somewhat spent hotbed under glass, and well inured to the weather before being planted out in the trenches. The last two crops are sown on a slightly warm bed under glass, and some are also sown in the open ground at



A represents a section of ground planted with Broccoli and Cauliflower.—*b b*, Broccoli.
a a, Cauliflower.

B represents the ground after the Cauliflower has been removed and the Celery trenches prepared for under-cropping, the Broccoli stems being earthed up as a protection from frost.—*c c c*, protected Broccoli; *n n n*, ground level; *d d*, trenches for Celery and under-cropping; *e e e*, manure-bed; *f f*, drain-pipes covered over with rough materials, and forming a connection with the main drains.

C represents the first crop of Celery earthed up after the whole of the under-crops have been removed from the ground.—*h h*, the first Celery crop; *g g g*, the second crop, planted on a bed of manure in the trenches formed by the operation of earthing up the first crop.

D represents the second crop, earthed up from the material on which the first crop had been grown, and the third succession planted on a new bed formed on the space formerly occupied by the first crop.—*i i i*, the second crop; *k k*, the third crop, which will ultimately be earthed from the material occupied by the second crop.

E represents the ground trenched and thoroughly mixed with the rich material so abundantly used in the cultivation of the Celery crop, the subsoil being broken up as low as the drainage, but not mixed with the top soil.—*l*, top soil; *m*, subsoil.

the latter period. When the plants from these sowings are sufficiently advanced they are either pricked into beds of rich mould, or are at once transplanted into their permanent situations, provided the early crops have been cleared from the trenches previously prepared for their growth.

The earthing up or blanching process is usually effected by three different operations: the first takes place when the plants have grown nine or ten inches in height; the small leaves immediately above the roots and all embryo suckers are very carefully removed. After that the bed is completely saturated with rich liquid manure, but subsequently to this period I do not consider it requisite that any artificial watering should take place; the beds are then covered with about four inches of mould from the ridges, which helps to keep the plants in an erect position, and acts like a mulching on the roots, thereby preventing in some measure the evaporation of moisture from the bed. Some three weeks before

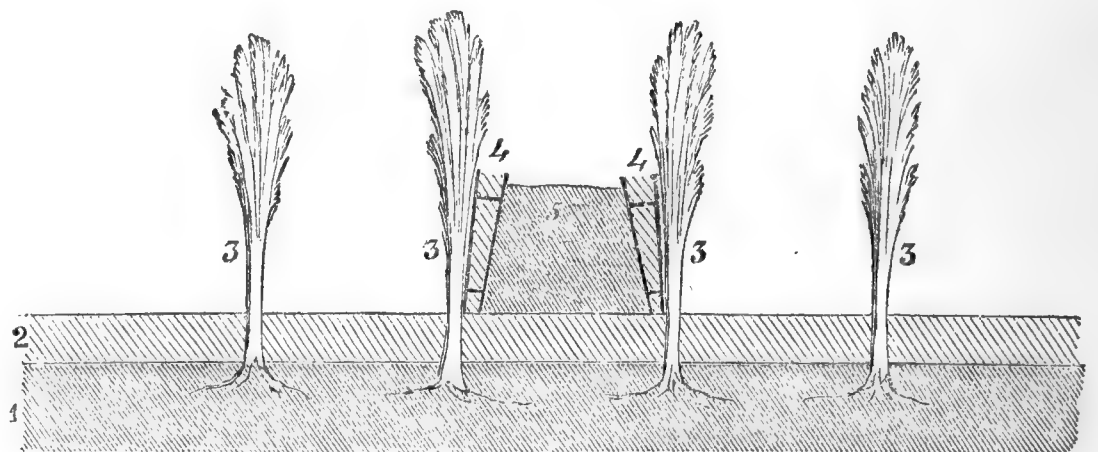
When sufficient blanching material has been deposited, the boards are carefully withdrawn and placed in the opposite row; and it will be readily understood that the fine mould which had passed through the vacuum formed between the boards will be in immediate connection with the leaves of the plants, the common earth placed in the centre of the row enabling it to maintain that position. These boards can, of course, be readily set any required distance apart, that distance being determined by the quantity of blanching material at command. This mode, whether applied to single rows or the more economical system of bed culture, I consider to be at least equal in its effects to any advantage that can be derived from the use of tiles—and this altogether apart from any consideration of the original expense of such ware, or the frequent breakage arising from the action of frost or other inevitable causes; and where, as at a ducal establishment I was formerly connected with, 12,000 plants were annually grown, the item for such dilapidations would amount to something considerable, and that, too, without conferring any equivalent benefit.

The third and final earthing of the early crops is accomplished at intervals of ten or twelve days before the Celery is required for use—placing the mould high and close about the leaves. I have, however, found a different system to be advantageous with Celery intended for winter use. Some time towards the latter part of October, when the weather is dry and favourable, the plants are fully earthed up, but the soil is neither put so high nor is so closely packed to the leaves as is recommended for the earlier crops, as I have found it to keep better under such conditions. After the winter has fairly set in I have a sufficient quantity for a fortnight's consumption covered over with leaves which had previously been heated, and from which cause they will readily remain in flakes of some six inches in thickness, and resist alike the action of frost or moisture. The covering over a day's consumption is merely removed with a fork so much further on to the bed, and this takes place from day to day. When, however, severe frosts set in, the whole of the ridges are covered over in the same manner, but the protection is removed on the recurrence of favourable weather, in order that the plants should not suffer from being too closely excluded from the atmosphere.

It will be perceived from the system here recommended that an enormous mass of vegetable matter can readily be obtained from a very limited portion of ground—that from the mode of arrangement the operations necessary for the cultivation of one crop become subservient to that of another—that the soil, from being so very frequently turned and aerated in fine weather, becomes fully disintegrated, and finally mixed with so large a portion of rich material, it is in a very favourable condition for the succeeding crop—and that such a system carried through any part of a garden must inevitably change its condition, however obdurate or sterile the nature of the soil may be. Moreover, this concentrated mode of cultivation economises not only labour, but manure and water also; the plants, too, being in close proximity, afford a mutual shelter, and consequently a

the early crop is required for use the second earthing takes place, and is performed in the following manner by two operators: two boards some eight or nine inches in depth, and equal in length to the width of the bed, are placed edgeways between the rows, each board resting against the plants in either row, so as to form at once space for the reception of the mould and a protection to the leaves whilst the operation of earthing is being performed. When the required quantity of soil has been deposited the boards are carefully withdrawn and placed between the next two rows, and so the work proceeds until all has been completed. When the soil is of a very wet, tenacious, or repugnant character, dry ashes, fine mould, or other material can readily be introduced next the plants, for which purpose double boards properly adjusted and fixed to each other form a ready medium by which to introduce the material thus:—

Section across the bed showing the Mode of Earthing Celery with double boards.



1, Manure-bed; 2, First earthing; 3, Celery Plants; 4, Vacuum between the adjusted boards to receive fine blanching material; 5, Common earth from the ridges.

quicker growth ensues than under circumstances of greater exposure, and on this altogether depend that crispness and solidity so desirable in this esculent.

A root crop is that which usually follows in the routine, being not only of a totally different character to the crops of the previous season, but from the circumstance of the ground having been cultivated so deeply, and so frequently and thoroughly aerated, it might be considered to be in a state well adapted for their growth, and more especially the tap-rooted sections of that class. I have this season, however, been induced to change that routine from the circumstance of the site being very favourable for a permanent crop, in much request here, and it is now being planted with Wilmot's late Red Currant, with Cauliflowers between the rows, which will be again interlined with the successional plants on which the early crops of Strawberries are growing so soon as they have been removed from the forcing houses. —(*Horticultural Society's Journal*.)

TREES ATTAINING A GREAT AGE OR SIZE.

THE YEW AND OAK.

It will, I believe, be generally admitted that trees are the noblest objects in natural history, towering above everything having a living form, and attaining an age which in some instances seems coeval with creation itself. It is not to be wondered at that trees have at all times been especial objects of veneration. Our Druidical ancestors seem to have been as much attached to the favourite monarch of their forests as were the idolatrous tribes recorded in holy writ to their groves and high places; and in more recent times many important events have taken place under trees, which, apart from their intrinsic beauty, render certain trees objects of much curiosity. But it is not my purpose to dwell on this subject, but to call attention to the points which have assisted very large or aged trees to arrive at their present

condition, in order that in planting young ones they may stand a fair chance of arriving at such a venerable age or size as those we now look upon as models in their way, and shall therefore begin with one of the most remarkable indigenous trees we have, the

YEW.—This interesting tree is found in various situations, but generally, when found in a wild state, is on some very dry hill side, or not unusually on a chalk cliff, where it stands frowning over everything around it, an object of unchanging green, sombre, yet grand in some cases from its size. Unfortunately in many such situations its beauty has not protected it from the ruthless hand of utilitarianism, and picturesque old trees have been converted into firewood, or to objects of unimportant interest. But it is consoling to learn that young trees are coming on in such places sown by natural means: they steadily grow on, struggling at times with more robust trees for an existence, and some perishing in the contest. Still many do get up to grace the neighbourhood their parents had done for ages before them; and it may be proper here to mention that, although nice healthy-looking plants of two or three feet high are plentiful enough in the natural woods and wastes of chalky or very dry, stony hills, they will not bear to be transplanted; at least, I never knew them succeed satisfactorily. The roots, unlike the Spruce and other Firs, extend in long lines, with but few branchlet fibres, and a tap root also descends a considerable way. This secure mode of bracing the tree to its post enables it to brave the severest gales of winter with impunity, so that we rarely ever see a Yew tree overthrown until decay deprives it of its hold in one direction. Now, as it is useless to search for plants, except seedling ones of one year old, to plant in the garden or grounds of a well-kept place, recourse must be had to the nursery, where plants having acquired a sort of artificial condition may be removed almost at any season of the year, for no plant is more hardy than the Yew; and though it is found wild on dry, chalky, or rocky hills, it will grow, and even thrive well, on a situation almost diametrically opposite. Large healthy Yews are not at all rare on a cold, clayey soil, and even on moist soils I have seen some good specimens, but I do not think they are so long lived on such soils, and their growth is seldom good; but our churchyards, with, I believe, few exceptions, contain Yew trees of greater or less age, and in many instances these are of necessity planted on a cold, clayey soil; but the finest trees are by far found on dry situations. A few years ago I measured one in the churchyard at Ulcomb whose circumference was upwards of twenty-seven feet at four feet from the ground, and I believe the timber at that place to be nearly all sound. Its bole was short, and, somewhat strange to say, it was thicker where measured than it was lower down, a sort of barrel-shaped swell giving it an odd shape. It was, however, a very fine healthy tree, with a well-expanded top; the situation a dry hill side facing the south; soil a light-coloured mould, resting on a soft stone near the surface, with limestone beneath. A tree still more remarkable than the last is growing in Loose churchyard, the situation being near the bottom of a valley between two steep hills formed of Kentish ragstone. This tree is, however, merely a shell of its former greatness, but in dimension exceeds everything of its kind that I have heard of in England, the girth midway between the claws at bottom and the breakings of its branches being upwards of thirty-two feet; and though, as I have said before, it is hollow, and capable of holding I do not know how many people, there are none of the openings exceeding two feet, and being all united at top, and the bole presenting a symmetrical appearance, dispel the idea that the tree has opened to enlarge itself. Its top being healthy it is probable it may live for many generations

yet, an emblem of its almost everlasting durability. Remnants of such trees as the last named are not uncommon, but this one presents as healthy and large a top as most trees of middle age; and how many years may elapse ere its only remains be a few stunted branches protruding from some one of its sides, the other a mere wreck of dead wood, it is impossible to say. Suffice it to observe that there are many such venerable relics of the past in all parts of the country. I noticed one a short time ago in a churchyard in the northern part of Cheshire, the church being amongst the oldest of its kind we have. Some record exists of its dating back some years prior to the Norman Conquest, and I was told the Yew tree was as old as the church, which I truly believe. Now, as old trees in many situations other than in churchyards have doubtless been planted by the hand of Nature, we may rest assured that the situation of such trees is the one best adapted for their well-being; therefore a dry, chalky hill side or top is the one for a Yew, and very often such trees receive no shelter from each other, nor from other trees or objects. Let us see how this case agrees with that of other kinds of trees.

OAK.—This fit emblem of our national greatness is, however, not a solitary object like the last named, keeping watch and ward over the portals of the dead, or frowning in defiant majesty over some chasm or inaccessible precipice; on the contrary, the Oak is found growing in groups on the plains, or gentle undulations of districts not so dry as where the Yew flourishes. Oaks are found in various soils, but generally in the greatest perfection on soils not very dry. A loose stone-shatter not over dry suits the tree best, but it is often found on soils of stiff loamy character. In travelling through a nobleman's park in Cheshire a short time ago I measured several trees that were upwards of fifteen feet in circumference about five feet from the ground, and they seemed to lose very little of their thickness for thirty or forty feet upwards. These were growing on a black, sandy soil, not wet to the surface certainly, but having a considerable quantity within eighteen inches of it. These trees had, undoubtedly, been planted where they were growing, and carefully attended to in their young days, as I never saw Oaks with such fine clear stems elsewhere; but they had reached the apex of their greatness as useful timber trees, and some few of them showed signs of decay. There were groups of Beech and Elm near them, but much inferior in point of size; in fact, though I have seen plenty of individual trees larger, I do not remember to have seen a quantity of such fine trees at one place before, and, as I say, on a situation whose subsoil seemed charged with water, the upper stratum being a black, sandy soil, likely enough to grow Rhododendrons well. Woods of natural Oak are common enough, and some present specimens as stunted as it is possible to conceive. This, no doubt, arises from the fact of the best lands having been brought into cultivation long ago, one of the best criteria of good land being the quality of timber it bears. Doubtless our forefathers, like our Transatlantic brethren, were alike guided by that. It is, therefore, only prudent to plant Oak for profit on such soils as it thrives well upon, the smoke of a town and the salt spray of the ocean being alike hurtful to it; but it will often thrive on a dry, rocky soil, and on such places its timber is more tough, and a less quantity of sap or white wood is formed. Oak timber is, perhaps, the most durable of any kind we have when exposed to the trying changes of wet and dry. Almost any kind will keep when immersed continuously in water, and some will last a long time if kept dry, but few will endure both alternately. One point here it is proper to observe—that the Oak bears pruning, in the general sense in which it is understood, worse than most trees. Large limbs ought never to be

cut off old or full-grown trees, and when it is necessary to prune a young one, which it often is, do not by any means cut the condemned limb closely off, but shorten it in. Having witnessed a good many trees sawn up I have seen the evil effects of this with Oaks, while Elms seem not so much affected as other trees. From the inquiries made elsewhere it seems that large Oak trees are more common than other kinds. This, however, may be an error arising from the popularity the tree has attained; but in the neighbourhood I write from, which is a well-wooded one, Elms collectively and individually are larger trees than Oaks, and their growth is more rapid, especially the dark-coloured-barked variety, called by various local names, but most extensively known as Dutch Elm. This tree grows very rapidly on the dry, stony soils of this neighbourhood, and attains a larger size than the Oak; but, as I may have a few observations to make on this much-despised tree hereafter, I must leave it until another time. J. ROBSON.

THE USE AND ABUSE OF THE MOWING MACHINE.

I YESTERDAY came across Mr. Robson's memorandum on the mowing machine and scythe in the number of THE COTTAGE GARDENER for the 7th of July, and in which I do not think he gives the machine its fair due.

Being one of the gentlemen who occasionally find it a "useful and pleasing mode of taking athletic exercise," I propose to give you the results of my experience, and will deal with some of the disadvantages he mentions.

1. Though it will not cut grass under boughs of trees, nor in intricate places *generally*, yet it is very handy in doing work partaking of an intricate character; but it must be remembered that the machine is put forward as a machine to mow *lawns*, which have always more or less open space of some extent, and any considerable intricacies in which are judiciously avoided.

2. It will cut grass on any slope not so steep as to cause the machine to slip. Undulations are of no consequence, and if the grass be really a *lawn* I may expect it to be tolerably smooth and even surfaced; but the machine is really not so over nice.

3. As to its liability to "go wrong," I have had my mowing machine in work two summers, and it has not "gone wrong" yet. The fact is that, like machines generally, it wants a *little care*, and must have it, and it is just that which it so ordinarily fails to have, and then it "goes wrong," and then it is tampered with, till at last it will not go at all.

4. Assuming the machine to be a good one and in proper order, leave it alone, and play no tricks by experimenting on it, altering the gearing, &c. This requires skill and nicety, and a thorough acquaintance with the putting together and bearings of the different parts of the machine. Mine has mown nearly half an acre at least once a week for two summers, and I see no difference in its work. Keep the cogs, wheels, and bearings well oiled with sweet oil. Sweep the verge of the grass before using, to get rid of small stones strayed off from the paths. Brush off any damp grass sticking to the machine after use, and place it under cover when done with. In moving it from place to place turn it upside down. Wheel it carefully over any stony or uneven places, to prevent fracture or straining from shakes or jars. Five minutes extra employed on these trifles at each time of using will prevent its "going wrong." Neglect any one of them, and its fate is decided.

5. As to the economy of time from its use, I have this morning been mowing a part of my lawn, consisting of an oval and undulating piece of ground, and containing 9,025 square feet. It has four small circular beds for specimen plants, and two large trees upon it. My mowing machine is nineteen inches in the width of the blade. With fair work, neither hurrying nor dawdling, it took me and the undergardener a few minutes less than two hours. Every part of the ground was gone over twice, and was at the same time cleaned, rolled, and left in perfect order. No two men with scythes could have left it better, and as a matter of informa-

tion I should very much like to know, first, what time would it have taken two men to go over the same ground twice with a scythe; and secondly, then to have swept and rolled it; for they would have had no chance with the machine as to neatness otherwise.

6. As to the machine mowing long grass, grass laid flat, and weeds, could any piece of grass in such a state have any pretensions to be called a lawn? The machine is intended to mow *lawns*, and is made to do fine work accordingly, and would be sure to disappoint any one who applied it to another purpose.

I never recommend the machine, because it is expensive, and because I fear that in nine cases out of ten it will be neglected or abused, or both, and which I do not think is very creditable to the class of men who should use them, and to whom and whose employers the saving of time would be of such serious importance.—REV. P., *Spring Grove, Hounslow*.

PROLIFIC SWARM OF BEES.

IN the number of THE COTTAGE GARDENER for August 26th, 1856, I related the unusual prolificacy of a swarm of the same season, and I now wish to add the sequel, as showing what may be done in the way of increasing stocks by proper management. A few lines of recapitulation will, however, save my readers the trouble of turning to the back volume, and also render the account intelligible to those who have it not at hand.

On June 3rd, 1856, I hived a *very strong* swarm into a flat-topped straw hive. On the 1st of July this hive gave out a swarm, which was hived in a common straw skep. On the 23rd of July a second swarm issued from the flat-topped hive, but the queen was caught, and the swarm returned. On the 28th of July a third swarm issued, and, as I was away from home, was allowed to establish itself in a straw hive, where it made a few pounds of honey, and was, in September, driven and the bees returned to the flat-topped hive from whence the swarm issued. Thus one swarm of 1856 threw out three swarms the same season, one being allowed to stand the winter in a common skep, or bell-shaped hive, the others returned.

In the present season, 1857, the flat-topped hive has given me a swarm and a cast, both of which now tenant a Stewarton hive, in which they have collected 40 lbs. of honey, in addition to a small glass of 6 lbs. which I took away early in the summer. The skep, which, in 1856, was tenanted by a swarm from a swarm, has yielded me, in 1857, a single swarm, which has also been placed in a second Stewarton hive, where it has collected 29 lbs. of net contents. Thus it will be seen that I have now in my possession four flourishing stocks, containing not less than 120 lbs. of honey, from a single swarm of last year, 1856. Looked at in a pecuniary sense the result is most gratifying; for, as a good stock is always worth two swarms, I may say that I have increased their value 700 per cent.

The mode by which this remarkable increase was obtained is very soon detailed. I began with a *very large* swarm, which was fed with barley sugar on wet days; and, secondly, I did not increase the size of the hive by adding ekes or supers, inasmuch as I wanted to increase the number of my stocks instead of obtaining honey.

As will be seen by the above, I have had two Stewarton hives in operation this season. The results of my experience respecting them are recorded in the following article.—W. B. TEGETMEIER, *Tottenham*.

STEWARTON HIVES IN THE SOUTH.

IN a former number of THE COTTAGE GARDENER, Vol. XVIII., page 7, I described the formation, and gave a general outline of the management, of the hives used at Stewarton, N.B., and stated that I had obtained some from Mr. Eaglesham, and intended using them and describing the result. In accordance with this promise I propose to record the progress of my two Stewarton hives this season.

Into the first, which I will call No. 1, I placed a swarm on May 25th. The swarm, I may mention, weighed within

an ounce or two of 3 lbs., and contained a queen of 1856. It was placed on the floor board of the old hive (which was removed to a new situation), so as to receive the outlying bees. On May 28th the bees were carrying pollen. In the middle of June they were not working well, so I took away the bottom box, and on the 21st of June I weighed the hive, and found the contents were only 5 lbs. In the same evening I therefore added to it the bees from a cast or second swarm, which, in consequence of coming off during my absence from home, had been hived for a fortnight in a common skep. The junction was made as follows:—The bees were driven out of the skep into an empty hive (by the by, some persons state that bees cannot be driven well unless the hive is full), jerked down between two parallel sticks placed on a cloth on the ground, and the Stewarton lifted off its stand and placed over them; one puff of tobacco smoke confounds the scent of the two communities, and they join without the loss of a single life. The honey in the skep I retained as my perquisite. The brood comb was put into a small glass, and put over the Stewarton, a communication being made by partly withdrawing two slides. The conjoined families immediately began working well. Two days after I returned the bottom box, and on July 20th removed the glass, which had been filled with 5½ lbs. of honey. On the last day of August I weighed the hive, consisting of the two boxes, and found its contents to be 26 lbs., and numerous drones were coming in and out, which was not the case with any of my other stocks.

The second Stewarton, No. 2, was tenanted on June 13th with a swarm from a common skep or straw hive. I am unable to state the weight of the swarm, but it was not heavy, or the age of the queen, except that she must have been born in 1855 or before. On the 21st of June, the first time I had an opportunity of weighing, the net contents amounted to 4 lbs., and on the last day of August to 19 lbs.

Now comes the question, Have the Stewarton hives answered, or have they not? Let us first compare their produce with that of the ordinary hives in this neighbourhood. If we do so, and take into consideration the period of swarming and the size of the swarms, we must allow they have done fairly, having 50 lbs. of contents in the two hives; but compared with what they ought to have done, and with what Stewartons are doing in the north, as Mr. Wilson's interesting letters testify, they are certainly very backward. Mr. Eaglesham writes to me thus on June 19th:—"Your Stewarton (No. 1) is backward; I expected to hear both boxes were filled. Our success is certainly owing to the strength of our swarms. We consider 5 lbs. an average swarm, our common straw hives being fifteen inches wide by twelve high. We have had no swarms yet, but a friend fourteen miles off informs me that he had a swarm on Saturday, which was accidentally joined by another on Sunday, and the combined force filled the top box by Wednesday night. We never had four more favourable days."

On July 31st—"We should consider the results you mention as failures. On Monday I saw a stock consisting of a swarm and cast in a neighbour's garden; they had nearly completed a 20 lb. honey box, and their owner intended removing it and the top body box, containing about 30 lbs. of comb, and then sending it to the moors; and we have many similar results. I should mention that the hive consists of three body boxes and one honey box, capable of containing altogether 80 lbs. to 90 lbs. of honey."

Now, how are these different results to be accounted for? Simply by the fact that in the north they tenant their hives with swarms of 5 lbs. weight, and then add a cast or second swarm, whereas the custom in this locality is to begin with a 3 lb. swarm, and hive the casts separately. I was desirous of seeing how the Stewarton boxes would work if thus treated, and find, as I expected, that they do not yield the same results as when properly filled to begin with. I wrote to Mr. Eaglesham, stating that to work well they should have two swarms from our small southern hives; and in reply he states, "Your advice as to the printed directions is good; indeed, from what I know of the size of the common hives, I would say that two or three swarms should be put into the boxes."

Having deposed thus much as to facts, let me now give my opinion as to the value and convenience of the Stewarton hives. I see no reason to alter the opinion I formerly gave regarding them, that in a good bee country, and when tenanted by a strong swarm, certainly not of less weight than 5 lbs., or by two swarms from common-sized hives, or, still better, two and a cast, they answer well, and yield a very large return. They are most convenient in working, the slides being readily moved in or out so as to separate or connect the different boxes. Feeding is readily accomplished when required; in short, that I am pleased with them may be inferred from the fact that I have made arrangements to increase my number next spring, when I hope to tenant them with very strong colonies, and have no doubt but that, if the season be a good one, I shall have satisfactory results.

It cannot be too often or too strongly impressed upon all bee keepers (bee *masters* know it right well) that weak swarms and stocks are worthless, and should always be joined. For instance, I had this season two stocks in hives of my own pattern, which are capable of being storified to any extent. During the whole of June they were scarcely working at all, one having been shifted after having given out a first swarm, and then having given out a second or cast, and the other having been tenanted with a weak swarm of the present season. As they were going on neither would have collected sufficient honey to have lived through the winter. I therefore joined them on July 10th, by placing the old stock under the box which contained the swarm of the current year, preventing fighting by a puff of tobacco smoke. The next morning a dead queen was thrown out, and the conjoined families were actively at work. I had shortly to add a third box below, and on July 31st I removed the top box, containing 18 lbs. of honey, which was so pure that it readily found a buyer at two shillings per pound; in fact, by far the greater part was in virgin comb, a small portion of the two central combs only having been bred in.

I mention this not only to show the utility of joining weak stocks, but to correct an erroneous statement I saw lately made in THE COTTAGE GARDENER that stocks cannot be advantageously joined in the summer. I have certainly joined weak stocks in eight months out of the twelve, and never did so without benefit.—W. B. TEGETMEIER.

QUERIES AND ANSWERS.

GARDEN ON A ROCKY SUBSOIL.—DELPHINIUM FORMOSUM.—TACSONIA MOLLISSIMA.

"My flower garden is on the bank of a small river, and on rock, with only about three feet of soil. The side next the water goes down perpendicularly about ten or twelve feet, the soil being kept up by a wall built on the rock. The consequence is, this year and last my garden has been burnt up, and, instead of being a pleasure, is a constant mortification. The soil, also, sets as hard as a brick; my Verbenas, Petunias, and Calceolarias look wretched when everybody's are in full beauty. Will you kindly tell me what will be the best way of managing my beds, and what the best compost for retaining moisture? My garden is only small, at least the part devoted to bedding-out plants, so I do not mind the trouble, and am determined, if possible, to succeed better next year. Also be good enough to tell me how *Delphinium formosum* and *Linum verum kermesinum* should be treated in winter. I have a plant of *Tacsonia mollissima*, a year old, which has borne one flower only. Should I cut it back now?"—W.

[You have one of the very best situations for flower-beds unless your garden is on ground very high, or very low, or much exposed. All you want is proper soil and good management. The whole of the present soil, from the wall to the walk or front of the beds, should be entirely removed next winter down to the rock, and the place filled with any *fresh* soil you can get, such as would grow wheat, or barley, or beans, but not turnips or carrots—that is, not a light soil. The change of soil should be done in dry weather, and the soil should be trod down gently as you fill it in. Get it to an even, smooth surface; then trace out the shape of the beds on the bare ground, and turf the spaces between; or, if

you gravel it, the same work should be done; as, without a thorough revision of the soil, you will never be able to do much good by merely filling the beds with good soil in such a situation; but do as advised, and you will soon see such masses of flowers as were never seen in that part of the country before, owing to your favourable situation. *Delphinium formosum* requires only to be allowed to rest in winter where it flowered in the beds or borders like other hardy herbaceous plants. The *Linum verum kermesinum* is a name we never heard before. Leave the *Tacsonia* as it is till the end of October, then cut it back to within one yard of the roots, even should it be forty or fifty feet long.]

CLIMBERS FOR A WEST WALL.

"Will you inform me the best description of climbing plants to cover a space of twelve feet by fifteen feet high with a western aspect, and also those best suited for a south-eastern aspect."—H. P.

[The answer depends on whether the walls are in London or in the country, and what kind of scenery is in front of the parts required to be covered; but Ivy, the Virginian Creeper (*Ampelopsis quinquefolia*), and the *Periploca Græca* are the best to cover walls in town or country, if it is merely to get rid of the sight of bricks in the shortest time.]

TO CORRESPONDENTS.

BOTANICAL CLASSIFICATION (J. A. D.).—Leaves are much too variable to form the basis of a classification, and may be changed in their characters by such simple circumstances as soil and climate. What would you do with some aquatic plants which have leaves of one form when growing in the water, but when grown on the land are completely altered? You could not put the same plant under two different classes.

CLUB-ROOT (A. B. C.).—You will see an article in our publication to-day that will suit your case. All we can urge, in extension of what is there stated, is to give the seed-beds a good watering of guano water in which soot has been also liberally diluted. The acrid bitter of the one, combined with the stimulating powers of the other, will assist the plant in outgrowing its adversary.

MEAD (T. M. W.).—It is useless to hope for good mead merely from refuse honey and the washing of the combs. If a luscious mead is required use four pounds of honey to every gallon of water; if a dry mead only three pounds. Boil gently for an hour, skimming carefully; cool until milk warm (75°) in an open tub. If four gallons are made add half a tea-cupful of yeast spread upon a toast. In two or three days the fermentation will cease; then barrel and treat like other home-made wine. If made in September it should be bright by the end of March; it may then be racked off into a clean cask and bunged down again. By September it will be fit for bottling.

NAMES OF FERNS (B. A.).—1. *Nephrodium exaltatum*. 2. *Adiantum cuneatum*. 3. *Pteris serrulatum*.

NAMES OF PLANTS (A Subscriber).—The pink flower inclosed is the *Oenothera rosea*, not an *Epilobium*, which is said to be a perennial plant, but is seldom seen now; yet some thirty years ago we used to have it come up in the borders in a weedy form, from allowing a plant or two to stand and go to seed yearly. The other specimen is an annual, *Nicandra physaloides*, the blue-flowered *Nicandra*, which will, in very rich soil, attain the height of from four to five feet, but it flowers more freely and forms a prettier ornament in poor soil. (A Young Gardener).—Your plant is the *Eutoca viscida*, a very pretty hardy annual, a native of California. Of course it has escaped from the garden on to the wall. (J. P.).—The everlasting flower is the *Antennaria margaritacea*. The *Pelargonium* is most likely the very variety you bought it for; it is too much shrivelled for us to form an opinion in this case of a mere variety.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

SEPTEMBER 7th, 8th, 9th, 10th. GLOUCESTER. Secs., Mr. H. Churchill, King's Head Hotel.

SEPTEMBER 9th. HECKMONDWIKE. Secs., Mr. G. H. Rhodes and Mr. Fred. Brearley. Entries close August 31st.

OCTOBER 1st and 2nd. WORCESTER. Sec., Mr. G. Griffiths, 7, St. Swithin Street, Worcester. Entries close Sept. 19th.

OCTOBER 7th. SOUTH WEST MIDDLESEX AGRICULTURAL SOCIETY, At Gunnersbury Farm, Ealing. Sec., J. Gotelee, Hounslow.

OCTOBER 8th. BUCKS AGRICULTURAL SOCIETY. Sec., Mr. Charles Fuller, Chiltern House, Wendover, Bucks. Entries close Sept. 24th.

NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.

DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.

DECEMBER 30th and 31st. BURNLEY AND EAST LANCASHIRE.

Entries close December 1st. Secs., Mr. Angus Sutherland and Mr. Ralph Landless.

JANUARY 1st, 1858. PAISLEY. Poultry, Pigeons, and Fancy Birds. Sec., Mr. W. Houston, 14, Barr Street, Paisley.

JANUARY 4th, 1858. KIRKCALDY POULTRY AND FANCY BIRD SHOW. Sec., Mr. Bonthron, jun., Thistle Street.

JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE.

JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.

FEBRUARY 3rd and 4th, 1858. PRESTON AND NORTH LANCASHIRE. Secs., Mr. R. Teebay and Mr. H. Oakey, Preston.

N.B.—Secretaries will oblige us by sending early copies of their lists.

ERRORS ABOUT CHICKENS EXHIBITED.

THERE is a penalty for doing more or better than your neighbours. Galileo gained only imprisonment by his discoveries. The inventors of printing did not fare much better. The first who discovered the power of steam was confined in the Bicêtre at Paris. Dr. Darwin was considered almost insane because, in his inflated verse, he predicted the uses to which it would be applied. These were all discoveries of men who, rising above their fellows, toiled at the shadows of the great things their minds conceived or saw. Statues and bronzes now celebrate the merit that was denied them at the time.

What would, however, be said if all these great achievements had taken place in pursuit of a reward offered for the discovery of either of these powers, and, when accomplished, had been met by doubt and accusation? It would seem incredible, yet such is the case with a small section of our poultry amateurs, and such will always be the case while men weigh their fellows and their exploits by themselves and their own capabilities. In a well regulated mind excellence in another should stimulate to exertion, and arouse a kindly spirit of emulation. A feeling of proper pride will always rather seek equality by rising to the height of the distinguished than by bringing him down to its own lower level.

Now, although this may be thought rather a high-flown introduction to a poultry article, yet we feel we are justified in treating the subject in this manner, because we believe some of our friends have been mistaken.

Prizes for chickens are offered for competition, and, of course, the largest and earliest get them. It has been the fashion of late years to look very learned, and to say, "They were hatched very early." No doubt they were, or they would not have been successful. Now, let us take the question fairly in hand. What is a chicken? A young fowl that has not attained to maturity. When does it become a fowl? When it lays and sits. At what age will those functions be performed? It differs according to the breed, the feeding, and the time of year. Cochins begin laying at from seventeen to twenty weeks; Brahmas the same; Dorkings at twenty weeks; Hamburgs the same, provided they are all generously fed and well cared for. Another point is that a chicken hatched in September is not so forward at five months old, i.e., in January, as a four months' chicken hatched in January is in April. The reason is plain. The first during its trying time has to encounter colder weather and longer nights every week; the second reverses it, because each day ushers in a more favourable time. A chicken, then, shown now, may be eight months old, and have gone through every process that forms a fowl—hatched in January, began to lay in May, sat in July, reared her chickens, and exhibited as a chicken in September. We do not mean by this to say that such are not to be distinguished from those classed as adults or birds of the previous year: a competent judge will detect the difference between them.

What we would insist upon is, that it does not of necessity follow that a bird in a chicken class is a hen because she has appearances of maturity about her, as we think we have shown that she may have fulfilled all the duties of maternity, and yet be honestly shown as a bird of the year. It is not a fair criterion to judge such birds by comparison with others that have been allowed almost to take their chance. These are hatched on purpose for competition, and fed from the egg; they are, consequently, forced on to maturity, and arrive at it long before those that are less cared for. As early maturity is one of the most valuable points in any

animal intended for food, those who help to bring it about deserve great thanks and every encouragement.

One word more and we have done. If it is certain an adult is shown as a chicken, by all means let it be exposed. We would not be apologists of any who wilfully do wrong, let them be who they may; but good breeders and exhibitors should not be discouraged by doubts which are sometimes visionary, and at other times have no other foundation than imaginary discoveries.

BRADFORD POULTRY EXHIBITION.

THE first annual Show of the newly-formed Bradford Poultry, Pigeon, and Rabbit Society was held in the grounds of the Peel Park on the 26th of August. The Show, for a first one, was good—the best that has been held in this part of Yorkshire. The pens were 350 in number, which had been brought together from all parts of the kingdom.

The *Spanish* and *Cochin-China* varieties were, on the whole, good; but the principal strength of the Exhibition lay in the several varieties of *Game* fowls, which were contributed by the principal breeders in the country, and which were excellent both as regards number and quality. Some of the birds entered for competition have carried off both silver cups and first prizes from the chief shows in the kingdom; indeed, the bird to which the silver cup was here awarded (single cock) is said to be the most perfect specimen of its class ever seen in Yorkshire. The *Hamburgh* fowls were well represented; the pen of Silver-pencilled chickens to which the first prize was given, and the pen of old Silver-spangled birds, also first in quality, were as near perfection in their kind as could be expected. The *Bantams* mustered so strongly, and were so good, that a pen which obtained the first prize at the Exhibition at the Crystal Palace only obtained the second with us. It may, therefore, be concluded that the pen which received the first prize was indeed superior. The *Ducks* shown were creditable to the breeders, the first prize for the "Aylesbury" kind being awarded to an exhibitor from that town. The *Pigeons* were superb. They formed a very interesting feature of the Show. There were not many *Rabbits*, but those shown were good. Some attracted considerable attention, amongst which it may, perhaps, be well to notice a pair, the property of Mr. Child, of Birmingham. They were of gigantic size, and measured twenty-one inches and a half in ear. Master Rudd, of Undercliffe, and Mr. Bowles, of Dudley Hill, exhibited also some noticeable animals—pretty white ones, which they designated Miniature Prussians, and which appeared to be no larger than an ordinary rabbit when two months old. The following is a list of the prizes:—

SPANISH.—First, S. H. Hyde, Moss Cottage, Ashton-under-Lyne. Second, J. Dixon, North Park, Bradford. Commended, Wm. Dawson, Hopton Mirfield. *Chickens.*—First, J. Dixon. Second, S. Robson, Polkington.

COCHIN AND BRAHMA POOTRAS.—First, J. Dixon, North Park, Bradford. Second, J. R. Rodbard, Aldwick Court, Langford, near Bristol. Commended, Rev. G. Hustler, Appleton, Tadcaster. *Chickens.*—First, J. R. Rodbard. Second, W. Harvey, Oxford Street, Sheffield.

DORKINGS.—First, Rev. G. Hustler, Appleton, Tadcaster. Second, P. W. Barnard, Bigby, Brigg, Lincolnshire. Commended, the Hon. W. W. Vernon, Wolseley Hall, Rugeley, Staffordshire. *Chickens.*—First and Second, H. W. B. Berwick, Helmsley, near York.

GAME (Red).—First, Noble and Ineson, Heckmondwike. Second, J. Scott, Skipton. Commended, the Hon. W. W. Vernon, Wolseley Hall, Rugeley; F. W. Fox, Dewsbury. *Chickens.*—CUP, Master J. H. Smith, Kent House, Halifax. Second, F. W. Fox, Dewsbury. Commended, Master F. Hardy, Prince of Wales Inn, Old Bowling Lane, Bradford; J. Smith, Keltcliffe Lane, Guiseley.

GAME (Duckwings, Greys, and Blues).—First, F. W. Fox, Dewsbury. Second, J. Dixon, Bradford. *Chickens.*—First, the Hon. W. W. Vernon, Wolseley Hall, Rugeley. Second, J. Dixon, Bradford. Commended, E. Wright, Manningham.

GAME (any other variety).—First, Noble and Ineson, Heckmondwike. Second, J. Dixon, Bradford. *Chickens.*—First, Noble and Ineson, Heckmondwike. Second, E. Wright, Manningham. Commended, W. Harvey, Oxford Street, Sheffield.

HAMBURGHS (Golden-spangled).—First, J. Conyers, jun., 42, Boar Lane, Leeds. Second, T. Wigney, Huddersfield. *Chickens.*—First, G. Haigh, Lip Hill Bank, near Holmfirth. Second, W. Ludlam, Bradford.

HAMBURGHS (Silver-spangled).—CUP, Bird and Beldon, Eccleshill Moor, Bradford. Second, J. Dixon, Bradford. *Chickens.*—First, W. Murgatroyd, Gill Mill, near Baildon. Second, T. Coates, Pudsey. Commended, Mrs. H. Sharp, Bradford.

HAMBURGHS (Golden-pencilled).—First, J. Crabtree, Branch, near Shipley. Second, W. Harvey, Oxford Street, Sheffield. *Chickens.*—First, J. Martin, Northwick Terrace, Claines, Worcester. Second, J. Hollings, Horton. Commended, W. Ludlam, Bradford.

HAMBURGHS (Silver-pencilled).—First, W. Maud, Victoria Place, Bingley. Second, P. W. Barnard, Bigby, Brigg, Lincolnshire. Commended, J. Dixon, Bradford. *Chickens.*—First (fine pig, given by Mr. Riddiough), Mrs. H. Sharp, 47, Mill Lane, Bradford. Second, J. Glover, Bingley. Commended, J. Dixon, Bradford.

POLISH (Gold and Silver).—First and Second, J. Dixon, Bradford. *Chickens.*—First and Second, J. Dixon, Bradford.

POLISH (any other variety).—First, T. Battye, Holmfirth. Second, J. Dixon, Bradford. *Chickens.*—First, J. H. Kilner, Acker House, Wibsey. Second, T. Battye, Holmfirth. Commended, P. W. Barnard, Bigby, Brigg, Lincolnshire.

BANTAMS (Gold and Silver-laced).—First, F. Wragg, Steel Bank, Sheffield. Second, the Hon. W. W. Vernon, Rugeley. Commended, T. H. D. Bayley, Ickwell House, near Biggleswade, Bedfordshire.

BANTAMS (any other variety).—CUP, M. Ridgway, Dewsbury (Black). Second, the Hon. W. W. Vernon, Wolseley Hall, Rugeley. Highly Commended, E. Stansfield, Dewsbury. Commended, the Hon. W. W. Vernon, Wolseley Hall, Rugeley.

ANY OTHER DISTINCT BREED.—First, W. Dawson, Hopton Mirfield (Sultan). Second, W. Maud, Victoria Place, Bingley. Commended, Master G. H. Burton, Bolton; M. Ridgway, Dewsbury. *Chickens.*—First, J. J. Fox, Devizes, Wilts (Malays). Second, W. Maud, Victoria Place, Bingley. Commended, Mrs. A. Watkin, Freedom Cottage, Walkley, Sheffield.

DUCKS (Aylesbury).—First, J. Weston, Aylesbury, Bucks. Second, J. Dixon, Bradford. Commended, P. W. Barnard, Bigby, Brigg, Lincolnshire; J. R. Rodbard, Aldwick Court, Langford, near Bristol; J. Parker, Gilstead, near Bingley.

DUCKS (Rouen).—First, J. Dixon, Bradford. Second, J. Jennings, School Street, Bradford.

BEST SINGLE GAME COCK.—CUP, W. Johnson, High Grounds, Worksop. Highly Commended, G. D. Jarvis, Tickhill. Commended, the Hon. W. W. Vernon, Wolseley Hall, Rugeley; Master J. H. Smith, Kent House, Halifax.

PIGEONS.—Carriers.—First, Master H. Smith, Kent House, Halifax. Second, J. Firth, Halifax. *Croppers.*—First, Master H. Smith, Kent House, Halifax. Second, J. Firth, Halifax. *Tumblers.*—First, J. W. Edge, Aston New Town, Birmingham. Second, Master H. Smith, Kent House, Halifax. *Owls.*—First, Bird and Beldon, Eccleshill Moor. Second, C. R. Titterton, Birmingham. *Turbits.*—First, H. Child, jun., Sherbourne Road, Birmingham. Second, C. R. Titterton, Birmingham. *Nuns.*—First, J. W. Edge, Aston New Town, Birmingham. Second, J. Firth, Halifax. *Jacobins.*—First, J. W. Edge, Aston New Town, Birmingham. Second, T. Grove, Leamington. *Fantails.*—First, H. Child, jun., Sherbourne Road, Birmingham. Second, J. Hogg, Skircoat Moor, Halifax. *Any other variety.*—First, J. Hogg, Halifax (Trumpeters). Second, J. Hogg, Halifax (Archangels).

RABBITS.—Lop-eared.—First, H. Child, jun., Sherbourne Road, Birmingham. Second, J. Bowles, Dudley Hill. *Any other variety.*—First, J. G. Draper, 221, Manchester Road, Bradford. Second, J. Bowles, Dudley Hill, Bradford.

The Judges were Messrs. Stead, Leeds; Dodds, Ovenden; and Thompson, Southowram. Their awards gave almost general satisfaction.—(*Bradford Observer.*)

POULTRY AT THE CALDER VALE AGRICULTURAL SHOW.

THIS, the nineteenth Exhibition of the Association, was held at Halifax on the 29th of August. It surpassed all its predecessors.

Judges of Poultry, Mr. C. S. Floyd, Sands, Holmfirth, and Mr. G. Hutchinson, Prospect House, York.

Judge of Pigeons, Mr. W. Sykes, Sheepridge, Huddersfield. Their awards were as follow:—

HAMBURGHS (Golden-pencilled).—First, W. Harvey, Sheffield. Second, J. Dixon, North Park, Bradford. *Chickens.*—First, W. Smith, Kent House. Second, J. Dixon, Bradford.

HAMBURGHS (Silver-pencilled).—First, D. Leeming, Halifax. Second, W. Maude, Bingley. Commended, J. Dixon, Bradford. *Chickens.*—First, J. Dixon, Bradford. Second, J. Mitchell, Hipperholme.

HAMBURGHS (Golden-spangled).—First, J. Dixon, Bradford. Second, D. Ashworth, Halifax. (A splendid class.) *Chickens.*—First, J. Dixon, Bradford. Second, D. Leeming, Halifax.

HAMBURGHS (Silver-spangled).—First, Bird and Beldon, Eccleshill. Second, J. Dixon, Bradford. *Chickens.*—First, Bird and Beldon, Eccleshill. Second, J. Mitchell, Hipperholme.

DORKING CHICKENS.—First and Second, J. N. Dransfield, Penistone. **SPANISH.**—First, H. Mills, Ovenden. Second, W. Dawson, Mirfield. *Chickens.*—First, H. Mills, Ovenden. Second, J. Dixon, Bradford.

GAME (White and Piles).—First, W. Smith, Kent House. Second, B. S. Eastwood, Ovenden. *Chickens.*—First, W. Smith, Kent House. Second, T. E. Abraham, Bickerstaffe, Ormskirk (White).

GAME (Black-breasted and other Reds).—First, D. Ashworth, Halifax. Second, J. Dixon, Bradford (Red). *Chickens.*—First, W. Smith, Kent House. Second, T. Bottomley, Shelf.

GAME (Black and Brassy-winged, except Greys).—First, J. Dixon, Bradford (Black).—Second, Bairstow and Eastwood, Ovenden. *Chickens.*—First, J. Dixon, Bradford. Second, T. Grove, Leamington.

GAME (Duckwings and other Greys and Blues).—First, D. Leeming, Halifax (Blue). Second, W. Smith, Kent House. *Chickens.*—First, W. Smith, Kent House. Second, P. Metcalfe, Ovenden. Commended, J. Dixon, Bradford.

POLANDS (Gold or Silver).—First and Second, J. Dixon, Bradford. *Chickens.*—Prize, J. Dixon, Bradford.

BANTAMS.—First, J. Dixon, Bradford. Second, W. Dawson, Mirfield. *Chickens.*—Prize, W. Walsh, Halifax.

COCHIN-CHINAS.—First, W. Dawson, Mirfield. Second, J. Dixon, Bradford (White). Chickens.—First, W. Dawson, Mirfield. Second, W. Holland, Lightcliffe.

CROSS BREEDS.—First, W. Maude, Bingley (Black Hamburgs). Second, R. Binns, Warley (Cuckoos). Commended, J. Brooke, Catherine Slack (Dutch Dumps).

DUCKS (Aylesbury).—First, J. Dixon, Bradford. Second, D. Leeming, Halifax. Ducklings.—First, J. Dixon, Bradford. Second, H. Atkinson, Southwram.

DUCKS (Rouen).—First, J. Dixon, Bradford. Second, H. Ambler, Watkinson Hall. Ducklings.—First, J. Dixon, Bradford. Second, D. Leeming, Halifax.

TURKEYS.—First, H. Edwards, M.P., Pye Nest. Second, G. Haigh, Bermerside. Poults.—First, Miss Louisa Goodall, Skircoat. Second, H. Edwards, M.P., Pye Nest.

PIGEONS.—Carriers.—First, J. Firth, Lily Lane (Blue). Second, W. Smith, Kent House. Almond Tumblers.—First, W. Smith, Kent House. Second, J. Hogg, Skircoat. Balbs, Beards, and Mottled Tumblers.—First, W. Smith, Kent House. Second, J. W. Edge, Aston New Town, Birmingham (Balbs). Owls.—First, J. Bairstow, Skircoat. Second, Bird and Beldon, Eccleshill. Turbits.—First, J. Parkinson, jun., Wheatley. Second, H. Child, jun., Birmingham. Jacobins.—First, J. W. Edge, Birmingham. Second, T. Barker, Halifax. Fantails.—First, H. Child, jun., Birmingham. Second, T. Grove, Leamington. Pouters or Croppers.—First, J. Firth, Lily Lane. Second, W. Smith, Kent House. Barbs.—First, J. Hogg, Skircoat. Second, S. Tennand, Outlane. Dragoons.—First, W. Smith, Kent House. Second, D. Winks, Ovenden. Archangels.—First, H. Child, jun., Birmingham. Second, J. Hogg, Skircoat. Runts.—First, J. Firth, Lily Lane. Second, H. Child, jun., Birmingham. Nuns.—First, J. W. Edge, Birmingham. Second, J. Firth, Lily Lane. Trumpeters.—First, W. Smith, Kent House. Second, H. Child, jun., Birmingham. Any other breed.—First, J. Hogg, Skircoat (Swallows). Second, H. Child, jun., Birmingham.

RABBITS.—Length of Ears.—Prize, H. Child, jun., Birmingham. Coloured.—Prize, H. Child, jun., Birmingham. Weight.—Prize, H. Child, jun., Birmingham. Foreign or other variety.—Prize, H. Child, jun., Birmingham.

A PLEA FOR WHITE DORKINGS.

As you were so kind as to insert in your valuable periodical my complaints of the indifference with which this breed of fowls is treated by Poultry Show Committees, I will venture to trouble you with a few facts which will prove that White Dorkings can be reared with as little loss as any other chickens.

This year I hatched my first brood of eight White Dorkings on the 13th of March; they are all alive now (August 29th), except one that was killed for the table. The cockerels weigh more than 4 lbs. 8 ozs. each, the best pullets more than 3 lbs. These chickens have not been fattened.

Out of fifty White Dorkings hatched between March 13th and May 21st only two have died of disease, one has been killed by a rat, and two by a dog. I have kept Hamburgs and Cochins in the same yard; they have had the same care, but out of only twelve Cochins three have died; and none of the White Dorkings have, I believe, crooked breasts.

I feed my chickens when very young on egg, groats, and lettuce; when five or six days old on small wheat and hempseed; and not until they are more than two months old do I give them either barley or oats. The coops are kept very dry, and are cleaned out every day—twice a day when the brood is large. The first few days after the chickens are hatched they are closely confined to the coop, and fed every two hours. After they are ten days old I let the hen and chickens have the run of the lawn in the middle of the day. I consider that cleanliness and fresh water are more important than even good food to the growth and health of young chickens.—A SUBSCRIBER TO THE COTTAGE GARDENER.

PIGEONS.

CLASS 9. VARIETY 1.—THE CARMELITE (*Columba pumila*).

French. German.
PIGEON CARME. KARMELITE TAUBE.

THIS unique variety has not yet, I believe, been introduced into this country. It is mentioned by several continental writers on Pigeons, among them Dr. Bechstein and MM. Boitard and Corbie, which latter names it *Columba Carmelitana*. They are very small Pigeons, and exceedingly short-legged, so that they appear to sit or squat on the ground. The feet and toes are covered with very long feathers. The beak is short, and less than that of the

Turtle Dove. At the back of the head is a small turned crown or point of feathers. The marking is what we



designate magpied. The colour of the mantle, or the ground colour, is either light grey, iron grey, chamois, or claret brown, the wings and under part of the body excepted, which are always white, like our common Magpie Pigeons. The feathers on the feet are the same colour as the body. They appear to be scarce in France, and not very plentiful in Germany. M. Boitard further remarks that the male and female always resemble each other; that these pretty birds are productive enough; but that the smallness of their progeny prevents their being kept by such persons who prefer utility rather than elegance in the individual.—B. P. BRENT.

OUR LETTER BOX.

BATH AND WEST OF ENGLAND SOCIETY'S POULTRY SHOW.—“The Secretary (H. S. Maule) of the Bath and West of England Agricultural Society has written to inform me that a letter has appeared in your paper of August 25th, complaining of the non-payment of the Newton prizes. Whatever blame has been incurred rests with myself as Director of the poultry department, and not with H. S. Maule. When I mention that the cups were only received on the 28th, and forwarded the next day, with all the cheques in payment of second prizes, you will perceive no time was lost after they came into our hands. Owing to most unavoidable causes the manufacturer could not let me have them earlier, and after they left his hands an error on the rail delayed them again a week or ten days, or your correspondent would have been spared the trouble of complaining. If he has had any experience in getting a new pattern made in silver, and afterwards properly chased and correctly engraved, with all the classes to compare between Director, Secretary, and engraver, he will not on reflection, I think, consider two or three months a very unreasonable time. I regret, however, there should have been any delay, and wish to take the full share of disgrace, if your readers, who have by this time received their cups, think I deserve it.”—SAMUEL PITMAN, *Picton Castle, Haverfordwest*.

[We said no more than we thought when we said that the Bath and West of England Society could not be suspected of shuffling. Mr. Crocker, whose letter of the 25th ult. is referred to, will agree with us that Mr. Pitman's letter is perfectly satisfactory.—ED.]


COCHIN-CHINAS AT BRADFORD.—“The remarks made by a Bradford Committeeman in your number of the 25th of August, as to the few entries of Cochin-Chinas in his neighbourhood, excited my curiosity, and I consequently looked over the catalogues of several Poultry Shows. The result confirms your remarks on his letter. I am not aware of there being anything in the neighbourhood of Bradford to deter exhibitors of Cochins from sending there as well as to other places if a sufficient inducement is held out; and I think Committees should encourage all useful classes, and not allow their partiality for those particular kinds which they keep to cause them to act unjustly towards other sorts. The figures below show the total number of entries, omitting the single cock classes, at the last Shows held at Birmingham, Preston, Liverpool, Prescott, Sheffield, and the Crystal Palace.”

Game (all kinds)	595	Dorkings (all kinds).....	278
Hamburgs, do.	583	Polish, do.....	238
Cochins, do.	344	Spanish	216
Brahmas, do.....	59	Bantams (all kinds)	212

—KI-WANG.

CRYSTAL PALACE POULTRY SHOW (*An Amateur*). — Part of your letter is libellous, and cannot be published in our columns. The other parts shall appear if you send us your name.

WEEKLY CALENDAR.

D M	D W	SEPTEMBER 15—21, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
15	TU	Hypericum barbatum.	30.186—30.126	69—44	S.W.	—	37 a. 5	14 a. 6	1 51	27	4 55	258
16	W	EMBER WEEK.	30.130—30.092	68—41	W.	—	38	12	3 14	28	5 16	259
17	TH	Soapwort (Saponaria).	29.952—29.798	67—48	S.W.	10	40	9	4 32	29	5 37	260
18	F	Silene maritima.	29.860—29.836	64—37	N.W.	01	41	7	sets.		5 58	261
19	S	Arenaria ciliata.	29.965—29.851	60—36	N.W.	—	43	5	6 a 17	1	6 19	262
20	SUN	15 SUNDAY AFTER TRINITY.	30.043—29.997	58—29	N.	—	44	2	6 27	2	6 40	263
21	M	ST. MATTHEW.	30.042—29.616	66—41	W.	12	46	0	6 40	3	7 1	264

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 67.1°, and 46.2°, respectively. The greatest heat, 84°, occurred on the 17th, in 1843; and the lowest cold, 29°, on the 17th, in 1840. During the period 101 days were fine, and on 95 rain fell.

THE Meeting of the BRITISH POMOLOGICAL SOCIETY, appointed for awarding the prizes for the best seedling Grapes and Grapes of new introduction, was held at the rooms, St. Martin's Hall, on Saturday last, Mr. Hogg, V.P., in the chair. The prizes offered by the Society were—Class A, Two Guineas for the best seedling Grape having a Muscat flavour; Class B, Two Guineas for the best seedling Grape of any other description not having a Muscat flavour; Class C, Two Guineas for the best Grape, not a seedling, raised in this country, and not in general commerce. The Meeting was very numerously attended, and the proceedings excited a considerable degree of interest.

In Class A the only entry was a black seedling brought by Mr. Snow, gardener to Earl de Grey, Wrest Park, Bedfordshire, and called *Muscat Hamburgh*. Four bunches of this variety were produced; one weighing 5½ lbs. was ripened in an ordinary vinery with only a little heat on cold nights at the time of setting, and another smaller bunch from the same Vine cut to test its merits. The berry is of good size, and oval shape, skin black, thin, and separating freely from the flesh, which is tender, and very juicy, with a rich, sugary juice, and a high Muscat perfume. A bunch from a Vine grown in a pot in the same house as the preceding was even more rich in flavour, and more highly perfumed; and another bunch grown in a Peach house, and which had been ripe since June, was shrivelled, and even more sugary than the others. The members present having partaken of some of all the bunches, it was decided unanimously that Mr. Snow be awarded the premium offered, and that the *Muscat Hamburgh* is a Grape of first-rate excellence, and possesses features which are not found in any other variety in cultivation.

In Class B there were three entries: a white seedling raised by Mr. Busby, gardener to S. Crawley, Esq., of Stockwood Park, near Luton, Bedfordshire, and called *Golden Hamburgh*; a white variety raised by Mr. Ivery, nurseryman, Dorking, and called *Ivery's Buckland Sweetwater*; and a black variety brought by Alexander Scrutton, Esq., St. Anne's Hill, Wandsworth. Mr. Busby's produces a bunch as large as, and shouldered like, the Black Hamburgh; the berries are large and roundish oval; yellow, and, when fully ripe, with somewhat of a golden or pale amber tinge; the skin is remarkably thin, and separates freely from the flesh, which is very tender, melting and juicy, sugary and vinous, leaving on the palate a full and luscious flavour. There was also a small bunch which had been cut ever since June and hung up in a fruit room, and the berries on this were of a pale amber colour, quite shrivelled, and ate like a sweatmeat. Mr. Ivery's seedling approaches more the Sweetwater race, but produces a large bunch, well shouldered, with large round berries; but the specimen

exhibited was not considered sufficiently ripe. It was grown in an ordinary greenhouse with other plants, and had no fire heat, and Mr. Ivery was requested to produce it at a subsequent Meeting. The seedling brought by Mr. Scrutton was a very long, loose bunch, with medium-sized black berries; the bunch has much of the shape and size of Black Prince, but is quite distinct from that variety, and was ripened out of doors against a wall with a glass frame placed in front of it. The berries were of good flavour, and it was considered by the Meeting that, if this variety were subjected to a little heat, it might then exhibit properties which it does not now possess. All three having been carefully examined, it was resolved unanimously that the premium be awarded to Mr. Busby, and that the Golden Hamburgh is the finest of all white Grapes, the Muscats only excepted.

In Class C Mr. Fleming, gardener to His Grace the Duke of Sutherland at Trentham, sent a variety called *Trentham Black*, but he did not know whether it was a seedling, or one which had been imported from the Continent. The bunch is large and shouldered; the berries of medium size, oval. Skin black, thin, and separating freely from the flesh, which is very tender, juicy, and remarkably rich and sugary. Mr. Tillery, gardener to His Grace the Duke of Portland at Welbeck, sent a very large bunch of a grizzly-coloured Grape received from France. The berries were medium-sized and of good flavour, but did not exhibit anything remarkable in quality. On being put to the vote, it was decided unanimously that the premium be awarded to Mr. Fleming for the Grape called *Trentham Black*, which was highly recommended as of first-rate excellence. Mr. Fleming also sent a plant growing in a pot, showing how well it is adapted for that mode of culture.

There were several other varieties of Grapes; one called *White Romain*, from Mr. Fleming, which had been introduced from France by Mr. Rivers. It is a short, thick-set bunch, with medium-sized, roundish berries, of a yellowish white colour. The skin is so translucent that the seeds may be seen distinctly through. The flesh is firm, and adheres to the skin, but is sweet and highly flavoured. The wood of the vine is remarkably short-jointed and will possess great advantages for pot culture. Mr. Tillery, of Welbeck, sent specimens of *Black Tripoli*, beautifully coloured, jet black, and excellent in flavour; and also a bunch of *Chasselas Musquée*, which showed no appearance of the fruit cracking, and which Mr. Tillery attributed to the fact that it had been grown on a well-drained, shallow border, and kept dry when colouring. By this method he says the berries never crack. Mr. Cox, of Kempsey House, near Worcester, sent two bunches of Grapes, which he says are known in his neighbourhood as *Black Alicant* and *Black Morocco*; but they were not recognised as being either of those varieties as known to the members present. The bunch is eight inches long and five wide, very little if at all shouldered. The berries are very large, over one inch and a quarter in length, and one inch in diameter, skin black when

ripe, and covered with a thin bloom, but, as shown, the fruit was not sufficiently ripe. Mr. Cox very liberally placed any cuttings at the disposal of the Society for the use of its members, for which a vote of thanks was unanimously passed by the Meeting. Mr. Thompson, gardener to G. Lane Fox, Esq., of Bramham Park, near Tadcaster, sent a bunch of *Black Hamburgh* grown against a flued wall without any protection, except a calico covering in spring and autumn to keep off the wet. They were not quite ripe, but were of large size, and well grown. Mr. Thompson stated that when the bunches began to colour he put them into what he called "a Grape guard," made of thin sheet-iron and fine wire net, which keeps off rats, mice, birds, and insects. We should be glad if Mr. Thompson would favour us with a drawing and description of this Grape guard, as we have no doubt many of our readers would wish to avail themselves of so excellent a contrivance. Messrs. Dillistone and Co., nurserymen, Sturmer, near Halstead, sent a bunch of what they called *Early Prolific Grape*, which they considered three weeks earlier than any other they were acquainted with; but it was quite unripe, and did not appear to the Meeting to be anything remarkable.

Messrs. Henderson, of Pine Apple Place Nursery, Edgware Road, sent a Melon which had been introduced by Mr. Fleming, of Trentham, and was called *Fleming's Cocoa-nut Melon*. It is of large size, being twenty-two inches in circumference the long way. The shape is oval and bluntly ribbed, and the rind is yellowish green, covered with prominent netting. The flesh is green, very thick, and quite melting, and, though of excellent flavour, was not quite ready. Mr. Henderson stated that it had been said to keep two or three weeks after being cut, but that he himself had known it in first-rate condition ten days after. The specimen sent had been only three days cut, which may, in some measure, have accounted for it not possessing its full flavour. Another Melon, from Mr. Watson, Ealing, was a seedling raised between the Cantaloupe and Hoosainee. It weighed 10lbs., but was inferior in flavour; still the Meeting was of opinion that it should be again submitted. Mr. Watson stated that he had grown them to weigh 16 lbs.

Mr. G. McBey, gardener to Richard Ellison, Esq., of Sudbrooke Holme, Lincoln, sent specimens of a Peach, which was identified as the *Galande*, and also specimens of *Luscombe's Seedling Peach*, a large, pale-coloured variety of very good flavour. Messrs. Veitch and Son, of Exeter, sent fruit of the *Red Nectarine Peach*, which they received from Syria. They were rather injured by the carriage, and had begun to decay; but there was sufficient to enable us to state that they were excellent, and remarkable as having the exact flavour of a Nectarine. Two Plums from the same gentlemen, received also from Syria, were not thought to possess any unusual merit. Mr. Guthrie, of Tay Bank, Dundee, sent specimens of his seedling Plums *Tay Bank*, *Late Green*, and *Bella*. The two former are now well known in the south; but neither of them possessed flavour equal to the same fruit grown in England. Dr. Davies, of Pershore, sent a specimen of *Denyer's Victoria* Plum to show that it was quite distinct from *Jemmy Coombe*, and he also sent several Apples, which, not being ripe, were ordered to remain over till next Meeting. John Ferme, Esq., of Haddington, sent a seedling Pear, which was not considered worthy of cultivation. Messrs. Paul and Son, of Cheshunt, had a large and interesting collection of Apples and Pears, but none of them were ripe. Mr. Adams, nurseryman, Brentford, also exhibited a nice collection of the new Flemish Pears; but none of them were ripe with the exception of *Poire Pêche*, which was of excellent flavour. We need not particularise them at present. Mr. R. Smith, of Leamington, sent specimens

of what he called a seedling raised from the *Golden Pippin*, which was in reality a cross between the *Siberian Crab* and the *Golden Pippin*. It was of small size, with a long stalk, deep orange-coloured, which extended through the flesh, and the fruit had an agreeable acid flavour. Mr. Stein, nurseryman, Highgate, exhibited a seedling Apple, which was not approved of.

The following gentlemen were elected members:—

JAMES VEITCH, Esq., Exeter, and

ALEX. SCRUTTON, Esq., St. Anne's Hill, Wandsworth.

CRYSTAL PALACE HORTICULTURAL SHOW.

SEPTEMBER 9TH.

IN point of gardening and getting up, this, the second autumnal Show for the true Londoners, was far superior to the first, the whole of the plants being *evenly good* throughout, except the bedding *Geraniums*, which, with the exception of two or three lots, were not worth the pots in which they stood. The hot, dry season drove on the best of the *Fuchsias* beyond their time; yet there were many good ones here. Many of the old "collections" were worse off than the *Fuchsias* from the same cause, and did not make their appearance; but the improvement in the moderate collections of stove and greenhouse plants, and more particularly in that branch of stove and greenhouse plants called "miscellaneous," was most remarkable compared with those of this time last year.

Just as the Exhibition was cleared for the Judges Sir Joseph Paxton went round and took a close survey of everything that was staged, and he made the remark that autumnal shows need not be despaired of now, seeing the marked improvement in so short a time: "just the very thing we wanted for the country," he said. "Not so much for the country, Sir Joseph, if you please," said I, "as for the London gardeners. Depend upon it country gardeners are more alive to the shooting season than these Londoners, who, however, want only the stimulus of a gold purse to come out at Michaelmas as showily as on Midsummer-day."

There were very few really new plants. The best of them all, and the best marked of all the *Begonias*, was a new one from the Messrs. Rollisson, of Tooting—a large leaf in the style of *picta*, with a silvery broad band carried right round in the middle distance between the centre and the edges of the leaf, and of the exact shape of the leaf itself. This "milky way" left a dark green margin round the edges, and inclosed an equally dark green island in the centre of the leaf. Both the island and the margin were sparkled with a row of stars round and round.

The fruit was particularly good and most abundant; I mean particularly evenly good, not some very good and some the very reverse, as one sometimes sees. Better-looking *Apples* for pies and dumplings one could not pick up between Worcester and Ross, or between Gloucester and the city of Hereford, the finest Apple districts in Her Majesty's dominions. *Pears* much better looking, but most of them as hard as bullets. *Peaches* and *Nectarines* innumerable, and so even that all the Judges put together would find it difficult to say which was which, and which the best. Of *Grapes* and *Cherries* the same may be said, and *Plums* not far from a like report; but *Melons* more like balls for cannons of different calibre. *Mangoes* and *Pomegranates* were the only out-of-the-way fruit: the first were in the second stages of rottenness, and the second in that of ripeness, therefore both unfit for table.

The cottagers' and amateurs' collections of fruit, flowers, and vegetables were in a separate part, and were by far the best display of the kind I ever saw. Cut *Roses* were numerous, but the specimens were not over

good in any one of the classes. *Général Jacqueminot* was far superior to any Rose there in looks, which tells how it stands wet and dry, dry and drought; and, as perpetual Roses are not grown for the scent of the Moss and Cabbage Roses, I would never care whether they were very double or of this or that shape. There is no double dealing in *Général Jacqueminot* at any rate; but would or could one believe it? Some people wanted to put him down where I shall not say, even in these times of trouble.

Orchids not numerous, and, with a few exceptions, not very remarkable. The *Hollyhocks* few and good; *Gladioluses* extraordinarily good; *China Asters*, alias *French Asters* and *German Asters*, most superior; but the *Dahlias* were the most exquisitely beautiful of all that were there, and the most numerous, there being nine exhibitors of fifty kinds each, just 450, and that only a tithe, as it were, of the whole.

I must now take to my notes, and, as I began long before the Judges could decide the prizes, I had recourse to the "ruling passion," and judged extempore for the occasion; therefore do not trust to my hasty conclusions, but study the prizes in the authenticated form.

Beginning at the west or south end near the crystal fountain the principal *Japan Lilies* stood first, and Mr. Cutbush, of Highgate, had the first prize; Mr. Laybank second with much taller plants; and Mr. Higgs third. *Gladioluses* next, and Mr. Standish, of Bagshot, is the best exhibitor of them in England. His *Courantia fulgens*, *Dr. André*, and *Don Juan* are the best three highest coloured that have yet been exhibited. *Penelope*, *Vesta*, *Hellen*, *Rachel*, and *Impératrice* are the best of all the softest-coloured *Gladioluses* that ever yet appeared in England. Some would put *Rachel* before *Penelope*, and even *Vesta*, and, being an amateur as well as a critic in this family, my predilections may deceive me; but, believe me, the whole put together would make the finest group of them the world has ever yet seen.

Hollyhocks in spikes in mossed pots, the only improvement on former shows being a less breadth in the guard petals. There were more *puckerings* and open eyes than I expected to see, but I am not a good judge of them. *Verbenas*, very good kinds, intolerably badly done in cut blooms, after the fashion of the "button-hole" or monotonous nosegay, so many trusses put together; and why not as many again, or half so many? The ladies say it must be done on purpose to deceive, and they are pretty good judges of men, manners, and manoeuvres of that kind. The best two collections of quilled *Asters* came from Berkshire, from Mr. Betteredge and Mr. Besley, two new names to me.

Mr. Turner had the first in *Dahlias*, and I admired the flowers shown by the following very much:—Keynes, Barnes (an old Suffolk friend), Kimberly, Sealy, Holmes, Fraser, Parker, Gains, Fellowes, and so forth. Mr. Turner's seedlings, as being the first winner, I took down—*Marc Antony*, brown and orange; *Goldfinder*, largest and best yellow; *Canary*, shaded yellow; *Mrs. Church*, yellow tipped with cherry; and *Miss Pressly*, in a pretty lilac dress, with purple tips, and others that did not take my fancy so much. The best fancy kinds I took to be those from Mr. Barnes, of Stowmarket. Over these charming cut flowers, facing the north from the Gladioli to the end, were placed, in one continuous row, several collections of *Ferns*, giving the florist flowers the best chance in the world to "set off" their pride of birth. These *Ferns* were marked from Messrs. Epps, Gains, Halley, Bunny, Cutbush, and Jackson, who were all in one row. *Roses* followed the *Dahlias*. There were thirty-eight boxes of them, with some extras from Messrs. Epps, Francis, Paul, Mitchel, Rolland, Terry, Peed, and others. After *Général Jacqueminot* the following were the highest coloured:—*Gloire de France*, *Souvenir de l'Exposition*, *Lion des Combats* (dark), *Duchess of Norfolk*,

La Quintin, *Lord Raglan*. After them the better-known kinds stood thus:—*La Reine*, *Gloire de Dijon*, *Lamarque*, *Malmaison*, *Auguste Mie*, *Alphonse de Lamartine*, *Paul Duprez*, *Madame Schmidt*, and hosts of others. Very few *Géant de Batailles*, and those not particularly bright. *Vicomtesse de Cazes* and *Ophire* were the best two yellows.

The next in advance were the collections of stove and greenhouse plants in twelves, and Mr. Peed took the first prize with very fine plants of *Ixora*, *Allamandas*, two *Vincas*, *Dipladenia crassinoda*, *Pleroma elegans*, *Rondeletia speciosa*, a *Cyrtoceras*, and the good old *Crowea saligna*, with a large Heath. Mr. Taylor followed very closely in kinds and in culture, being two *Allamandas*, two *Dipladenias*, a *Pleroma*, *Crowea*, and Heath, a *Leschenaultia formosa*, two *Ixoras*, and *Begonia Prestonensis*. I did not notice a third prize collection; but a fourth from Mr. Epps contained three *Allamandas*, *Meyenia erecta*, *Roellia ciliaris*, a *Vinca*, *Statice Holdfordi*, and a very good-flowered plant of *Curcuma Roscoeana*.

In collections of sixes Mr. Hamp was first with two *Ixoras*, one *Allamanda*, a *Cyrtoceras*, *Dipladenia acuminata*, very near to *crassinoda*, and an *Erica*. The second, Mr. Raile, gardener to Lord Lovelace, with *Franciscea acuminata*, *Dipladenia*, *Meyenia*, *Vinca*, *Allamanda*, and *Clerodendrum Kämpferi*.

The rest of these collections were of similar kinds, and the Heaths of the same sorts as last year. *Achimenes*, very fair, *gloxiniiflora* the strangest looking of them—a bleary white, with the mouth, eye, and throat densely spotted. *Baumannii* (not *Backmanni*), the finest purple, and as large as the old blue, or larger. One collection of them was literally smashed with stays much longer than their bodies.

The first prize for *Fuchsias* was taken by Mr. Tiley with *Pearl of England*, *Alpheum*, red, *Coralina*, *Acteon*, *Glory*, and *Clapton Hero*. The second to Mr. Tegg for *Grandis*, *Elizabeth*, *Duke of Wellington*, *Autocrat*, *Venus de Medici*, and *Banks's Glory*. Mr. Bragg had *Wonderful*—the first time it appeared near London. It is certainly a splendid *Fuchsia*, dark purple inside, very large cup, and the sepals reflexed to the last degree; the plant a medium-sized grower.

Here Mr. Hosea Waterer came in with a group of *Cupressus Lawsoniana* and *C. blanca*, which is near it; also *C. MacNabiana*, an upright, and seemingly as spiral as *sempervirens*; also the variegated *Petunia* of Mr. Cutbush.

The *Cockscombs* were very numerous and very good, but none of them were trained in stays while young; therefore they were all out of shape—the fashion forty years since, but probably all the better for that.

The best plant grower in England saw with one eye what I could only make out with both last year, namely, that *Balsams* growing about London were not worth a button, and Mr. Green walked, or rather, stepped across the course with his *Balsams*; but they were all very good as far as they went, and there were scores of them, but all one uniform, small, cottage-sized *Balsams* except the first and second collections, the second being from Mr. Brown, gardener to G. C. M. Thomas, Esq., Kingswood, Dulwich.

For *variegated plants* Messrs. Jackson, of Kingston, took the first prize with a collection of twenty, some of them in flower, and some not; but the whole lot were the most uniformly grown, and of the best size for exhibition purposes. Depend upon it some of the huge specimens which have been shown in this class, and in the fine-leaved plants, have done a world of harm to the trade. I know as much, and more too, than I like to tell, for fear of offending the "country party," whose "ear" I have long enjoyed on these subjects. The Kingston collection contained two kinds of *Dracænas*, four kinds

of Marantas, two kinds of Crotons, *discolor* being particularly fine; *Begonia picta*, extra fine; *Aspidistra lurida* var., very fine, perhaps the best ever exhibited; *Pavetta Borbonica*, Hydrangea, *Tradescantia vittata*, a variety of Pine (*Ananassa*); a very fine Dumb Cane, Dieffenbachia, *Dioscorea discolor*, *Cissus discolor*, *Vriesia speciosa*, in fine bloom; and two more, the names of which I could not read.

The second prize in this class was taken by the Messrs. Parker and Williams, the latter being a bud or graft since last May. Their beautiful specimen of *Sansevieria Zeylanica* was truly named this time, and their others pressed hard on No. 1. Mr. Cutbush, of Barnet, followed in the same strain, his variegated Hydrangea being the best of the kind ever shown; and the Messrs. Lee were next in succession.

In another class of variegated, all out of bloom, Mr. Young was first, and after him a long list of others. Then, in the class of remarkable-looking and fine-leaved plants, the Messrs. Jackson and Parker and Williams were neck and neck. I put the Messrs. Jackson first, but on going round again I saw the Judges were against me, though I marked the following as very superior:—*Berberis trifurca*, *Rhododendron Falconeri*, *Cycas revoluta*, *Cordyline australis*, and an Indian species of *Plectocoma*. The best in Messrs. Parker and Williams's were their splendid *Dracæna*, *Philodendron pertusum*, and *Tupedanthus calyptratus*. In the second collection of the variegated plants by Mr. Morris was a most splendid specimen of the Caricature plant, *Graptophyllum hortense*. A fresh profile of a man's face is seen in the blotches of the leaves at each stage of growth.

I pass over all the Ferns and Lycopods till another day, and turn to the miscellany, the odds and ends—one of the richest departments of the Show. Mr. Carson had a splendid *Ixora coccinea* here, and *Dipladenia urophylla*; *Begonia rex*, the "milky way" Begonia, from Tooting Nursery; *Odontoglossum grande*, the finest ever seen, from the Messrs. Jackson, and another new species of the same, more like an Oncid; a fine large Oleander in bloom from Mr. Mascot; a swan-neck Orchid, *Cynoches Loddigesii*, and *Miltonia spectabilis* from Mr. Keile; *Dichorisandra thyrsiflora*, but called *ovata*, from somebody; then Balsams, Verbenas, Petunias, and Gloxinias; then a group of three kinds of five Ixoras, and five kinds of *Scolopendrium vulgare*, from Messrs. Parker and Williams; another group of dwarf scarlet Geraniums from Mr. Kinghorn; a seedling called *Lord John Russell*, which promises great things, as its namesake does now and then; a collection of standard scarlet Geraniums from a different name from that of this time last year; and then the bedding Geraniums in splendid confusion—three big errors in the first collection of sixes, *Diadematum rubescens* or *erubescens* being named *Spinii*, a wrong name to a different kind: *Spleenii*, after a German, is the right spelling. Mr. Gains gave the name and "sent out the kind." *Spleenii* is a very tall, strong flower; *erubescens* a bushy dwarf, with a soft, fringed leaf, and is the parent of the sport called *Surprise*. The old original *Diadematum* itself has a very thin, smooth, shining leaf, and the flower is streaked all over like some bird's egg on a rose ground. *Diadematum coccineum*, a very lively flower, was called *coccineum* only. *Diadematum carminatum* and *D. floribundum* are in the same way. *Rouge et Noir* was true, and so was *Touchstone*; also the white *Unique* and Mr. Veitch's new *Quercifol*, which is an excellent autumn pot or border plant. Mr. Gains had all the *Uniques*, the *Sidonia*, and an old half trailer, now called *Princess Augusta*, and about ten or twelve flowers among them all! Many of the scarlets were even worse, though more in bloom. The plants were downright trumpery, and not a single Nosegay at

the Show after all the handsome prizes offered for them. The Judges, if they gave a prize to any of the lots of common Geraniums which were "entered" as Nosegays, ought to be sent before the Lord Mayor.

Mr. Bragg entered *Princess Alice*, *Trentham Rose*, and *Cerise Unique* as Nosegays! (why not *Tom Thumbs*?) while Mr. Gains entered *Lady Plymouth*, *Prince of Orange*, *Rose-scented Crowsfoot* (*pinnatifidum*), and *Stag's Horn* or *Rasp-leaf* (*bipinnatifidum*), with equal confidence as pure and simple Nosegays; but there was one Nosegay in a very nice collection of variegated plants from Mrs. Conway, called *Silver Queen*. She also had a very fine specimen of the *Golden Chain* and *Brilliant*; but she had a misnamed kind in her collection of plain scarlets, *Lady Middleton* being called *Cherrycheek Improved*. The only really good specimens were from Mr Weatherill.

D. BEATON.

DERBYSHIRE—THE CLAYCROSS EXHIBITION, GARDENS, &c.

THIS county is well known to tourists and others for its picturesque scenery, which is, indeed, in many parts of the most magnificent character. Claycross is about three miles from Alfreton, and, although the scenery in these parts may by no means compare with the far-famed Matlock, yet it abounds in parts of hilly ranges, which are calculated to strike strangers from flat districts with astonishment. At a few miles from Alfreton on a lofty eminence may be seen "Crich Stand" or Observatory, one of the greatest elevations in this district. I ascended this rugged steep, and was delighted with the vast amphitheatre. The whole circle of the horizon could be seen without the intervention of a single object. This is a famous place, I understand, for picnic parties. Claycross, not long since a paltry country village, is now a most thriving town, and bids fair to be a place of high importance. Attempts have been made for many years to work a coal mine or two; but, like the wounded snake, "it dragged its slow length along" until the celebrated George Stephenson purchased the property, when it speedily assumed a new and rising character, being in proximity to several railways.

On Thursday, Sept. 3rd, the first season's Exhibition was held, and as a first essay was amazingly successful. An excellent band was in attendance, and, placed in an orchestra overhead, produced a capital effect in the rooms, although, as I think, somewhat too loud for the space in the interior of the building. Another, a juvenile band, and which paraded outside the building, created much interest, being a drum and fife band, and composed of boys from nine to fifteen years of age, dressed in a very handsome and lively costume of blue and white. The rooms were filled with tables in parallel lines, and one portion at the extreme end was converted into a tea room. The space allotted was thoroughly filled with exhibition matters, and, indeed, in some parts inconveniently crammed, because much space was allotted to the tea parties, the hilarity and enjoyment of which proved one of the chief features of the Exhibition.

In fruits there was little done. This county is by no means famed for the gifts of Pomona. There were some respectable Melons and Grapes, produced by Gladwin Turbutt, Esq., who is a well-known landed proprietor in this part of Derbyshire, and whose dignified-looking demesne stands delightfully embosomed amongst the finely-wooded hills of his extensive patrimonial estate. The Rev. T. Lund, also, had a very good *Seymour's Perfection* Melon. Each of these took a first prize in this class. The latter gentleman also produced a capital brace of Cucumbers, *Battley's Telegraph*, and a fine dish of superior Greengages. This was much to his credit, as his garden, which I saw, is very small, and

depends for its merits entirely on his own ideas of gardening. Mr. Lund, who is rector of Morton, is well known to the public by his important work on Algebra, as well as other books. There was abundance of good dumpling Apples. Pears were scarce. Other fruits by no means important, with the exception of Grapes, in which Gladwin Turbutt, Esq., and Mr. Barlow, gardener to the celebrated Robert Stephenson, Esq., near Chesterfield, took prizes. Mr. Barlow's Grapes were very good, especially the *Black Hamburgs*, which were not red Hamburgs. Mr. Barlow, I am given to understand, is a clever gardener, and, backed and assisted by a Stephenson, has already begun to attract some attention in that quarter.

The plant table was somewhat unimportant; but this was nowise surprising when we consider the mining and agricultural character of the district, and in addition the time of the year, by no means favourable to the production of exotic specimens. They have, however, some respectable florists; for there were some prime stands of Dahlias and respectable Pansies, together with lots of German Stocks, Asters, and what I was very glad to see—the old French and African Marigolds well represented.

To descend to vegetables. There were many dishes of excellent Onions, as also Potatoes; several plates of very good Peas; and Scarlet Runners in abundance, which seem to be much cultivated in these quarters, and are, indeed, one of the most valuable vegetables we have in this kingdom either for rich or poor. The rest of the garden produce I may pass by, as being of the usual character, excepting garden Turnips and Onions, in which, although nothing new, were some capital dishes.

And now I may just glance at the agricultural portion of the Exhibition, and must express my surprise that the objects in this way were of a limited character, seeing all around bears an agricultural stamp, and that a respectable one, taking all things into consideration. There were superior Wheats and Oats exhibited, I understood, by the Claycross Company, as well as others; but, as to length of ear, the Rev. Mr. Lund had some which I think are seldom excelled. When, however, we come to consider that the number of grains in short-jointed Wheat is frequently equal to that of the long-jointed, it becomes a question as to the value of extreme length, which, indeed, is in the main produced by exciting manures. One thing might be offered as argument. Would there not be an advantage to the long-jointed Wheats in a wet summer as to drying? Oats were in fine condition, and there were a few good agricultural Turnips, together with Mangolds and the usual accompaniments as to farm produce.

I think I have now particularised most of the things which deserve special notice, and may, perhaps, be permitted to offer a few concluding remarks. In the first place I would observe that the arrangements were deserving of much praise, especially when we consider that such exhibitions are a novelty at Claycross. They reflect much credit on Mr. Binns, who, I understood, was the prime mover in the matter. Doubtless another year will produce a more complete schedule and widened accommodations, together with a corresponding extension of exhibition articles.

Mr. Binns has excellent gardens about half a mile from Claycross, and by Mr. Binns's permission I had the pleasure of looking through these very interesting grounds after the Exhibition. Their general disposition is, on the whole, exceedingly good: style, design, system, and economy are obvious at a glance. The kitchen garden abounds in perpendicular trellises, well clothed with select Pears, Apples, &c.; the trees in capital order and well handled. Mr. Binns, being a very good gardener, is in a position to carry out his objects. He

has a vinery somewhat singular, albeit not entirely of a novel character. It is a double span-roof, running north and south longitudinally. Instead of the Vines being trained to the rafters, as is usually the case, they are on perpendicular trellises, one under each rafter. There is a path down the centre and a pit on each side, as also a set of trellises. This arrangement throws the surface of the pit into compartments, and in these Mr. Binns winters his bedding stock. His flower garden is exceedingly pretty, and is a hobby with him; and this vinery arrangement is remarkably adapted to carry out his purpose, which, in common language, is "to kill two birds with one stone."

But I must now speak of Mr. Binns's flower garden, which is one of the nicest things of its kind I have seen for some time. We all know that there has been a tendency of late to return to the old geometrically-disposed figures of our great grandsires; and in the main, and for special purposes, I consider it a step in the right direction. But there is another style, the right name for which I am scarcely in possession of; for the present I may be permitted to call it the irregular wavy style. It consists of curved lines, the beds varying considerably in form, yet combined by such an harmonious arrangement as to constitute a whole. The practised eye, in taking an off-hand glance, perceives a sort of general balance in the affair, and, if prepared for such a style and devoid of prejudice, is at once satisfied. But it is not in the beds alone that merit may be found—the management of the exterior lines, where a somewhat severe limitation is imposed, is of much consequence. The fence, then, behind this interesting plot is masked by such an artful intricacy that there is scarcely a chance for the visitor to suppose the existence of such a dead cutting line being so near at hand. Masses of shrubs and evergreens are so interposed as to leave at intervals irregular and tortuous breaks of a curvilinear character, the general outline being as deeply indented as circumstances permit. On the whole I consider this frontage quite a model for those who wish to indulge in curvilinear outlines.

Whilst in these parts I had a peep at a garden possessed by a person of consequence, and, although the grounds in general are exceedingly interesting, yet I mention it here to point to the misfortune of having an unsatisfactory fruit garden. The walls of the kitchen garden are considerable, and some scores of trees of various kinds are trained thereon; yet, strange to say, they would not stand a week's cooking in the tart way. As for preserves or desserts they present an uncomfortable blank. In order to endeavour to account for this awkward state of things I obtained from the proprietor, who gave it with the utmost liberality and freedom, an account of the character of the soil and the way in which things had been handled; and I merely advert to it here for the sake of throwing light on the fruit question. The trees, as far as I could learn, had been planted in the natural soil, perhaps with lots of manure. No preparation precautionary against the descent of the roots into a most ungenial subsoil had been made, and the consequences have been what we find everywhere in the case of tender fruits—an annually occurring immaturity, which, of course, becomes accumulative. And what must be the consequence of heedless planting on soils which receive the solar heat, as it were, with reluctance? Why, late growths, and, of course, immaturity, nakedness in portions of the limbs or branches, and barren fruit spurs, which, being only half organised, blossom in a future spring only to deceive. I suggested to the worthy proprietor a re-arrangement of his walls from one end to the other, and the adoption of the platform system, which I claim as my own, together with the limited use of choice turfy materials, avoiding manures of a gross character.

I saw at a garden a vinery in which the Vines have in part got into a bad condition. On inquiring as to depth of border my informant said it was only four feet. Now, although Vines have done tolerably well in four and five feet borders under peculiar circumstances, yet how much the odds are against them! What business has a Vine root that depth from the surface if we can prove two things—first, that the Vine is indigenous to a climate where, during the growing season, the roots are in a temperature several degrees higher than the soil in Britain under similar circumstances, and, secondly, that the soil at four feet deep will probably not be over 55°, whilst that within one foot of the surface will be ten or a dozen degrees higher during summer in this country?

Really, if Grape culture on the whole has been advancing in later years, some respect and consideration are surely due to a question of so much importance.

One thing more I may name as to the parts of Derbyshire I have visited. There is a great want of feeling for what may be called the pleasantries of gardening. One thing is missing in the country cottages, and the presence of which points to what may be called a gardening feeling: there is a great scant of flower-pots in the windows of cottagers as compared with some other parts of the kingdom. I always consider the window flower-pot an evidence of the feelings of the inmates. However, such affairs as the Claycross Exhibition will doubtless create a spirit of emulation, and I am assured that in a year or two the efforts made by the conductors will lead to such an amount of progress as possibly they do not anticipate.

ROBERT ERRINGTON.

GATHERINGS FROM NEIGHBOURS.

LUTON HOO.

A FULL description of this place will be found in a previous volume. I will merely note here a few things that struck me as improvements, &c., on my last visit.

PLANT STOVE.—The range of houses were supplied with fine, healthy crops. The back wall of the plant stove had been lowered to within eighteen inches or so of the path, and a bank of Ferns thus formed rivalling the Fern houses at Kew. A shelf next the back wall, about the same height, covered with beautiful Lycopods, &c., was appropriated to the smaller and rarer Ferns. On entering you look upon an avenue of Ferns. On turning round the end of the bed and along the front of the house you come in contact with fine Orchids and other stove plants. By this arrangement one house is made to present two or three distinct features—an idea worthy of consideration, especially in the case of those with limited house room. The *Aërides* I formerly mentioned had above forty spikes of bloom. The *Stanhopeas*, and especially *tigrina*, were throwing out magnificent bunches. In one of the vineries, though not planted many years, the bunches were given to shank a little. Mr. Fraser lifted the roots, placed them near the surface, and the evil was cured.

PORTULACAS.—In front of one of the houses was one of the most brilliant sights I have seen this season. A large border was a perfect blazing carpet of Portulaccas. There were white, yellow, orange, purple, and crimson, with various shades. The intention had been to have them in rows, but they had mixed and blended considerably, and perhaps with all the better effect, as it took off all appearance of stiffness. The fine sunny day brought out their beauties fully. The remarkably fine summer was also in their favour, but something must also have been owing to their treatment. They were raised in a little heat, and planted out about the end of May. It struck me there had been an inch or two of sandy gravel thrown over the border before planting, which would help to keep the collars of these succulents

from rotting off, even if there had been showery weather. We found the same plants growing vigorously on rock-works.

BACKGROUNDS TO FLOWER GARDENS.—In front of the houses is a largish flower garden on grass. This is separated from the kitchen garden beyond by a row of Scotch Roses, standard Roses, and another row of pyramidal Pears. A green bank or hedge high enough to prevent the eye looking upon Pea stakes, &c., beyond, would secure unity of expression. Our readers who recollect our description of Raith will remember how nicely Mr. Crockett secured that object under similar circumstances.

WASHING GRAVEL.—Good gravel is very scarce in the neighbourhood. It abounds so much in clay that it would be next to impassable when wet. Mr. Fraser has it brought to the vicinity of a pond, and there it is washed in tubs of water through strong, rather fine-meshed wire sieves, provided with two handles for the operator, and emptied in a heap *only* when the clayey matter is removed. The walks in consequence are not yet quite so firm on the surface as good people with wafer-soled shoes would wish, but every passing over with a roller will make the small stones smaller and more compact. If weeds do ever grow in such walks a sprinkling of salt would kill the weeds, crack the little stones, and thus help compactness, with but little injury in such open walks. I say with *such* walks, as I should wish to enter a *caveat* against the free use of salt in walks that are already compact enough, and from which water does not pass too freely, as the salt will have the tendency to make them still more compact, and frequently disagreeable, from the absorption and retention of moisture. The wearing effects of salt and its moisture-retaining properties have been somewhat overlooked, even by those who otherwise have disapproved of its use in an economical and labour question point of view. Whether these walks ever require salting or not, in the kitchen garden they look very neat at present, the Box edging being fresh laid; and, being well drained and almost level from side to side, not only may the pedestrian traverse them in wet weather without his boots getting clogged and leaving deep footprints behind him, but he escapes, owing to that levelness, the disagreeable sensation, if he has companions with him, of moving with a long leg and short leg alternately, as if he was walking on the sloping deck of a sailing vessel. I have known great expense incurred at times in securing good gravel from a distance when there was far better material at hand than what Mr. Fraser has used. The washing hint may, therefore, have its uses.

GIGANTIC ROCKERY, FERNERY, AND ALPINERY.—This has been formed this season on the south side of the octagon-shaped kitchen garden, between the garden wall and the old wood, which, in its fine specimens and winding, sequestered walks, still retains the marks of a Brown and a Collinson. On the west side beyond the wall border is an old orchard, and on the east side a new one is forming, to consist chiefly of dwarf trees. In the middle of this south wall is a garden door, and opposite to it a gateway into the old wood. A wide border in front of the wall is now devoted to herbaceous plants. The space between the walk and the wood, some two or three times wider, was devoted also to herbaceous plants and a collection of Grasses. The fernery, &c., is thus separated by the main walk into two divisions. With differences of ground plans the mode of action on both sides has been similar. A winding bank has been formed next the wood, diversified in its height and width, which is chiefly to be filled with *Lastræa filix mas* and *Pteris aquilina*, the common Braken. This last beautiful Fern Mr. Fraser, and, I may add, myself also, have found difficult to succeed in transplanting, the buds being placed on running stems so far frequently below the

surface. The space between that bank and the walk is thrown up into clumps of diversified appearance and aspect, the material chiefly used being the earth thrown out of the intersecting pathways, sunk to a considerable and varied depth, and yet dryness secured by drainage. The sides of these mound clumps and borders slope inwards from the intersecting walks, and are supported by layers of brickbats, diversified by huge lumps of brick that had run together and been next to vitrified in the kiln, large pudding and other singular stones, surmounted by fine specimens of old hollow pollards, many of which are already carpeted with the common Poly-pody. Our readers will at once imagine how nice a position the varied aspects and nooks and corners of such clumps and banks afford for lovely Alpines and graceful Ferns, at the same time giving a home to many a beautiful plant that would not group in the present fashionable flower garden, and perhaps more especially as furnishing a suitable residence to all plants that, like Ferns, are chiefly interesting from their foliage. Many beautiful Alpines are already at home, fair specimens of almost every British Fern are already to be seen, and hardy ones from other countries will also find a place. The commoner sides of brickwork will soon be concealed by *Iberis*, *Helianthemum*, *Crassula*, *Lysimachia nummularia*, &c. The position of such a rough piece of work between the wildish wood and the kitchen garden is exceedingly well chosen. Three things that Mr. Fraser has thought of will insure its greater completeness. First, shutting out either end from the orchard by means of a Yew or Laurel hedge, with a rustic archway or gateway for entrances; secondly, removing the herbaceous plants from the border in front of the wall, and throwing it up into clumps, only less elevated, by means of sinking winding pathways through them, the herbaceous plants being arranged in the centres of such clumps, or in groups entirely by themselves; and, thirdly, though not absolutely essential, yet as tending to the complete unity of the whole, removing the fruit trees from the wall, and covering it with Roses, Clematises, Brambles, Honeysuckles, &c., allowed to grow in a wild, almost natural, unpruned condition. Few of our readers would wish to imitate the size of this combination of fernery, alpinery, &c.; but there are few small places where corners and out-of-the-way spots might not thus be rendered very interesting merely as a change from the fruit garden, or the nicely-kept lawn of the flower garden. A few stones and old roots will be mostly all that are wanted to form a commencement. Let the place, however small, be well chosen nevertheless, or disappointment will follow to all concerned.

In the front of a Grecian mansion, surrounded by a beautiful lawn well stored with well-filled flower-beds on the massing system, I lately saw an unmeaning mound of this description forming a sort of centre to the whole. A short distance off there was a position where such a taste might have had full bent with propriety; but, strange to say, the owners were particularly delighted with this gimcrack, heterogeneous centre-piece. A byre or a pigsty may be made very ornamental. Very moderately so they are always interesting, because connected with ideas of utility; but, however ornamental, they would hardly be fit accessories as the centres of a well-furnished parlour. *Suitability* is a word which many of our professed leaders in gardening seem rarely to have studied, or we never should have had such clashing of ideas and distortions of fancy under the disguises of variety and contrast.

Of house plants, kitchen crops, and the health and fertility of old and young fruit trees I say nothing, but will conclude with two or three recollections of the pleasure ground and flower garden.

The first is, that all the American plants are thriving well in the marlish, clayey material I formerly stated

they were planted in. A few of the Chinese white Azaleas and the purple *phoenicea* had been a little injured last winter. The bulk of the white ones, however, escaped wholly unscathed, and bloomed freely this spring, and are now forming flower-buds.

2. In these pleasure grounds the walks were, if anything, too numerous. Some of these have been turfed down, and near others banks of evergreens have been planted, so as to a great extent to prevent one main walk being seen from another.

3. In doing this advantage has been taken to give a bolder background to the flower garden on the face of the hill, as seen from the delightful walk in the valley below. Shrubs which, when planted, were no obstruction to the view of the flower garden, when looked at from this lower walk were getting too large, and, being thinned and removed to the top and the sides, the keynote has been given for rendering this flower garden everything it is possible to make it in such a position. When, as at this season, a blaze of colour, such a garden will always be striking, especially when looked up to from the lower walk, or glanced across at from its neighbouring slope opposite in the park; and yet, after all, I cannot help *dreaming* about a fine Italian garden in front of the terrace of this noble mansion, with a fit accompaniment of statues, vases, and fountains.

R. FISH.

SOME ACCOUNT OF THE CRYPTOMERIA JAPONICA, OR JAPAN CEDAR.

By Mr. GEORGE GORDON, A.L.S., Superintendent of the Hardy Department in the Society's Garden.

FEW hardy plants are of more importance in England during winter than evergreens, more especially those of large dimensions, not only for objects of decoration, but for what is of greater importance in many situations, the providing shelter from bleak winds during the colder portions of the year; and, as the Japan Cedar is likely not only to prove hardy, but to form quite a new feature in our landscapes, much resembling the Australian form of *Araucaria*, a short account of its history and treatment may not be without interest.

The first account we find of the existence of this Japan Cedar is by Professor Thunberg, who, in the year 1784, published its history in his *Flora Japonica*, p. 265, under the name of *Cupressus Japonica*. He states that it is found, both spontaneous and planted, on the mountains of Nagasaki and elsewhere; that the Japanese call it San or Sugi, which, in their language, signifies an evergreen tree, with stiff bristle-shaped leaves; that it is a very tall upright tree, with a pyramidal head, bearing flowers in March; that the timber is very soft, so as to be easily worked, but much used for various purposes, particularly for cabinet work among the Japanese.

Nothing further seems to have been added to our knowledge of this beautiful tree until 1834, when Professor Don published a more technical description, with an uncoloured plate, in the 18th volume of the "Transactions of the Linnæan Society," under the name of *Cryptomeria Japonica*. His account was drawn up from the original specimen found in that portion of the Society's Herbarium which formerly belonged to their late President, Sir J. E. Smith, and which he obtained from the younger Linnæus, who had it from his friend and successor, Thunberg, after his return from Japan.

Mr. Loudon, in his large edition of the *Arboretum and Fruticetum Britannicum*, merely mentions the tree under the old name, at the end of *Cupressineæ*, upon the authority of Thunberg, and in the last or abridged edition of the *Arboretum Britannicum* omits the name altogether as being very doubtful. No certain account regarding it appears to have been again given from the time of Thunberg until the year 1844, when Dr. Siebold, in his beautiful *Flora Japonica*, gave a coloured plate and a detailed account of it, from which I have made the following extracts:—He says "that this majestic tree perfectly well deserves the name of Cedar,

its name in Japan; that it grows from sixty to one hundred feet in height, and four to five feet in diameter, with a pyramidal-shaped head, and rather erect or horizontal branches; that it occurs in great abundance on the three great Isles of Japan, and most probably on the smaller

ones; that a tenth part of the forests which cover the skirts of the mountains between 500 and 1200 feet of elevation is composed of this Japan Cedar."

Still nothing was known of the living plants in England, or, perhaps, in Europe, until Mr. Fortune succeeded in obtaining seeds at Shanghai, in the north of China, for the Society. They reached the Garden in a living state about the end of May, 1844, and from these the first plants were raised. Since that time an abundant supply has been received by the Society from the same source.

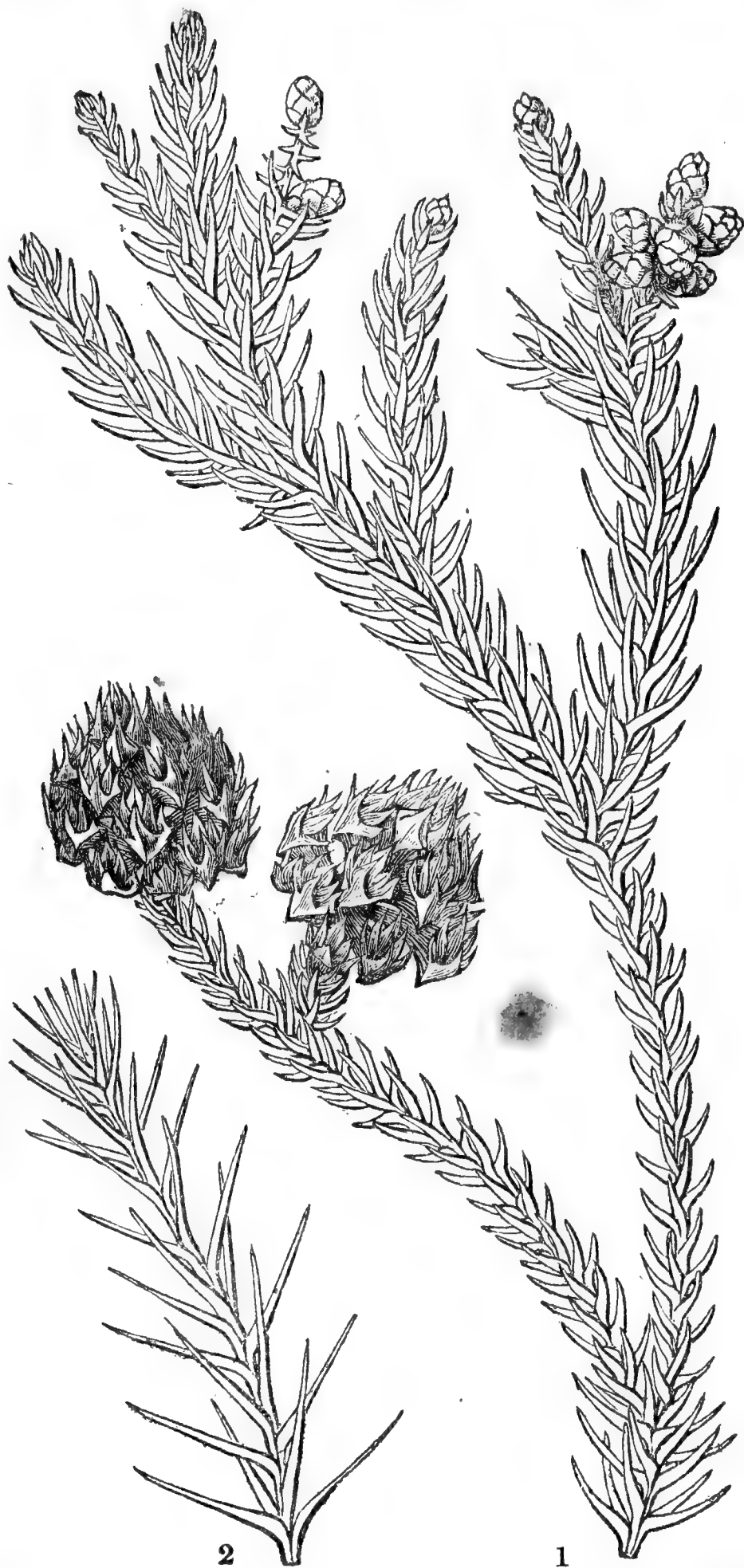
Cryptomeria Japonica is found plentifully about Shanghai, where it no doubt has been introduced from Japan; for naval officers who have been on that station assure us that it is very plentiful in the form of avenues and in groves in the neighbourhood of Shanghai, and in the other northern parts of China, and that it furnishes the principal shelter for the numerous birds during the extreme cold and bleak winds in winter, when the thermometer sometimes falls as low as within five degrees of zero. There can be little doubt, therefore, that it will prove quite hardy in England.

Some idea may be formed of this beautiful tree by imagining such stately objects as the Australian *Araucarias*, particularly *Cunninghami*, with a less aspiring and denser habit, and living in the open air in winter. Indeed, the young plants of *C. Japonica* and *Araucaria Cunninghami* have so great a resemblance that it requires a practised eye to distinguish the one from the other. The principal difference is, that the *Cryptomeria* has alternate spiral branches, which are rather slender, while those of the *Araucaria* are vertical and placed at regular distances.

This *Cryptomeria* appears intermediate between *Cupressus* and *Taxodium*, differing from the former in a seedling state by having from three to five, but mostly four, seed-leaves, while *Cupressus* has but two; and in its more advanced stages of growth, in its longer, more distant, subulate, incurved, spiral, dark green leaves, and in the cones having fringed scales. From *Taxodium* it is at once distinguished by its spiral subulate leaves, unlike those of *Taxodium*, which are flat and two-rowed.

In regard to cultivation, the Japan Cedar seems as easily managed as the common Chinese Arbor Vitæ, and like it succeeds in almost any kind of soil or situation which is not very poor or wet.

The seeds, like those of all Conifers, should be sown in a light, sandy, rather dry loam, and should be placed in a cool situation; when large enough the plants should be potted singly and treated in the usual way, and if properly attended to they will attain a height of from twelve to eighteen inches the first year. It appears to be a very rapid grower.—(*Horticultural Society's Journal*.)



Cryptomeria Japonica. 1. An old branch in fruit. 2. A branch of a very young plant.

A NOTE UPON THE WILD STATE OF MAIZE, OR INDIAN CORN.

WHEN Maize was first noticed by writers on rural affairs it had already acquired the name of Turkie Corn, Corn of Asia, Spanish Corn; and hence it was thought to have had an Asiatic origin. Parkinson, who wrote in 1640, even fancied that it might be the Bactrian Corn mentioned by Pliny.* But Gerarde gave a more correct history of its introduction:—"These kinds of grain," he says, "were first

brought into Spain, and then into other provinces of Europe; not, as some suppose, out of Asia Minor, which is the Turk's dominions, but out of America and the islands adjoining, as out of Florida and Virginia, or Noremberga, where they used to sow or set it to make bread of it." He adds, "Wee have as yet no certain proof or experience concerning the vertues of this kinde of corne, although the barbarous Indians, which know no better, are constrained to make a vertue of necessitie and think it a good food."—(*Gerarde's Herball*, by Johnson, p. 83, Edition 1636.)

Hernandez, in 1651, produced conclusive evidence of the American origin of this kind of corn; for in his account of

* "Tradunt in Bactris grana tantæ magnitudinis fieri ut singula spicas nostras æquat."—(*Hist. Nat.*, lib. xviii., c. 7.) ("They say that in Bactria the grain is of such a size that one grain is as large as our ears of corn." Theophrastus merely says that a grain of Bactrian Corn was as large as an Olive stone.)

the Natural History of Mexico he gives a figure of it, and states that its Mexican name is *Tlaolli*; and that of a beverage made from it, *Atolli*.*

Hernandez, however, gives no account of the wild state of the plant, nor does any other author that I have been able to meet with, and therefore a communication from Mr. M. Floy, of New York, acquires considerable interest. In a letter addressed to the Secretary he makes the following statement:—

“Last year I received from the Rocky Mountains a few grains of Native Indian Corn, which I consider to be the original corn. Its appearance is remarkably different from

the cultivated varieties, each grain being covered with a husky glume. I planted it last spring where no other corn could come in contact with it. I raised only two or three ears, which were of the same nature as those placed on the top of the ear of the corn received. I observed a grain or two which were but little covered with husk, the produce of which is almost like our common corn, showing that from its wild state two or three years of cultivation would bring it into its present form.”

This supposed wild form of the Maize is so interesting as to deserve an exact account of it. Three ears were received, of which

the smallest was eight inches, and the largest a foot in length. They resembled Indian Corn when very young, while the chaff or husks of the flowers still cover over the grains; but the grains were plump and ripe, and there was no sign of immaturity. In one of them a small number of grains near the point of the ear were peeping through the chaff or husks, or perhaps it would be more correct to say that near the point of one of the ears the chaff had already begun to diminish in size and to shrink back from the grains.

The accompanying figures will show more clearly the difference between the wild and cultivated corn. Fig. 1 is the former, in the upper part showing the appearance of the ear before it is cut open, and the lower, the grains enveloped in large leafy chaffs. Fig. 2 represents the corresponding appearance of an ear of the large white variety commonly cultivated in the United States. Its grains are not at all larger than those of the wild corn, but its chaffs are reduced to little membranous half-transparent scales, which are entirely concealed by the protruding grains. It is also curious to remark that cultivation has at the same time produced another effect, the centre of the ear having become large and firm, while the chaff has diminished, as if the deterioration of the latter had caused the enlargement of the former; a somewhat important fact, when it is considered that the centre of the ear of Indian Corn is itself a receptacle of nutritious matter.

Upon measuring off their parts the following appear to be their respective proportions:—

	Width of Centre.	Length of Grain.	Length of Chaffs.
Wild Corn	4 lines	4 lines	11 lines.
Cultivated Corn	9 lines	4 lines	2 lines.

To those who are acquainted with the changes which our cultivated esculents have in some cases also undergone, this new fact will probably show that it is by no means to be expected that such plants as corn and fruit trees should be recognisable in a wild state; and that it is quite possible that the wild type of some of our domestic fruits may lurk beneath disguises hitherto impenetrable.

Indian Corn adds, moreover, another example to that of the Carrot, which was completely domesticated by M. Vilmorin in three generations (See “Horticultural Transactions,” new series, vol. ii., p. 348), showing that in some plants the progress of improvement under cultivation is so rapid that they begin to change their form perceptibly from the moment when they are first brought under the dominion of man.—(*Horticultural Society's Journal*.)

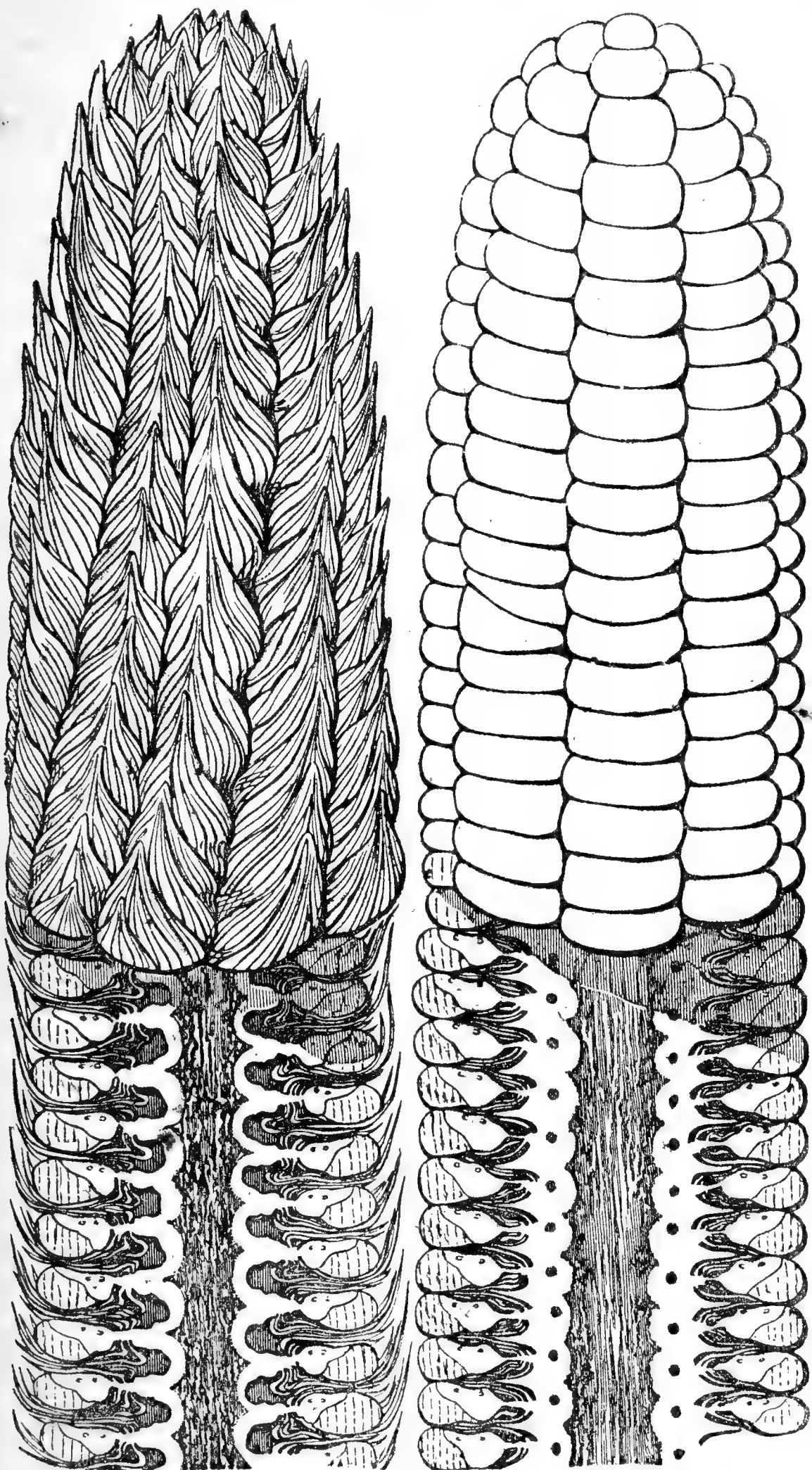


Fig. 1.

Fig. 2.

* M. Kunth (*Enumeratio Plantarum*, i. 19) states that Maize is wild in Paraguay, upon the authority of M. Auguste de St. Hilaire; but I do not find mention made in the works of that author of his having found Maize in a wild state.

NOTES FROM THE CONTINENT.—No. 10.

WILDPARK.

WHAT Mr. Veitch's nursery is to England Wildpark is to Prussia, and any person connected with horticulture would as soon think of coming to Berlin without seeing the one as of going to London without visiting the other. It is only a little distance beyond Potsdam, and is the property of a wealthy railway director of the name of Augustin. It is quite a new place, and though, a few years ago, there were only one or two small hothouses, there are now a good many, and all filled with plants in the very perfection of health. A few years more and this nursery will be celebrated throughout Europe for its collection of Palms: both for number of species and of individuals of each species it already takes rank among the first gardens in the world. Indeed, I doubt if we could at present find such a stock of young Palms in any other place as we see here. House after house we pass through, and find nothing else but these. Hundreds, nay, thousands of them are here arranged as thickly as is consistent with health, and all as clean and growing as freely as possible. While very young the pots are plunged in sawdust, beneath which is a chamber, through which run pipes, so as to furnish them with a genial warmth at the root.

Great quantities of Palm seeds are received here from German travellers in America and elsewhere. As soon as they arrive they are buried in this sawdust, where, if good, they in a short time germinate, and are then potted. Passing into other houses we saw plants more advanced, and old enough to be fine specimens of foliage plants. One house, and that not a small one, was entirely devoted to *Latanias*; the best among them *Latania rubra*, with its crimson leaf-stalks.

Although the Palms must stand first on account of their rarity, yet there are other features in the garden of equal interest. The Cycadaceous plants are numerous, fine, and healthy, many of them most beautiful objects to be used for decorative purposes, standing alone as single specimens, but none, perhaps, more elegant than the old *Cycas revoluta*, with a noble crown of plumelike fronds radiating from a centre. Then there were the Aroidaceous plants, some two hundred species. They were growing at the back of one of the houses of large Palms, in a dark, warm, and moist situation, which just suited them; and they scrambled over the branches and trunks of trees, growing as luxuriantly as if they were in their native forests. Then we came to the Fern houses. About fifty tree Fern stems had been received a few weeks previously from Tropical America. All had arrived safely, and were throwing out strong fronds. Beneath the stages, upon which a most extensive collection of Ferns was arranged, numerous species of *Selaginella* had been planted out, and were growing freely. The beautiful little golden Fern, *Notholaena chrysophylla*, was first sent out from this garden. The Orchids were numerous, but the plants rather small; for it would not pay to grow large specimens here. They are remarkably clean and healthy, doing great credit to the young Englishman who until lately had charge of them. In the aquarium were a fine *Victoria* and the scarcely less interesting *Euryale ferox*, while from the rafters hung many species of Gourd.

Perhaps one of the most difficult things a gardener is ever called upon to perform is to introduce rockwork indoors without its being so small as to look paltry, or so large as to appear clumsy; but in the principal greenhouse here it is done very naturally. There is no straining after effect. The masses of rock are arranged as we see them *in situ*, and therefore produce an effect which could not offend the most fastidious taste. They are placed in somewhat of a crescent shape, with a small stream of water gushing from a crevice near the top, and falling into a pool below. Good plants of many of the rarer Conifers are arranged among and above the rockwork, their pots hidden by a bed of Lycopods and various Ferns. There are also rocky grottoes leading from one house to another, and they have a very interesting appearance. There are many other things worthy of notice in this garden, and I hope to mention more of them upon another occasion.—KARL.

VITALITY OF SEEDS.

At the recent Meeting of the British Association for the Advancement of Science Dr. Daubeny, of Oxford, read the "Report of the Committee appointed to investigate the Vitality of Seeds." He alluded to the circumstances which called the Committee into existence, and stated that, after planting year after year all the seeds they were able to collect, they had now left but four species of plants whose seeds continued to grow. These were species belonging to the genera *Ulex*, *Dolichos*, *Malva*, and *Ipomæa*. He exhibited a register in which every experiment, as performed by Mr. Baxter, of the Botanic Garden, was detailed. From this register it would be seen that the shortest period for which any of the seeds had retained their vitality was eight years, and the longest forty-three years. Grouping the plants according to their natural orders, the following selected will give some idea of the plants whose seeds retain their vitality longest:—Gramineæ, 8 years; Liliaceæ, 10 years; Coniferæ, 12 years; Tiliaceæ, 27 years; Malvaceæ, 27 years; Leguminosæ, 43 years; Rhamnaceæ, 21 years; Boraginaceæ, 8 years; Convolvulaceæ, 14 years; Compositæ, 8 years; Myrtaceæ, 18 years; Umbelliferæ, 8 years; Cruciferæ, 8 years.

Mr. George Emerson, of the United States, expressed a doubt of the Maize being strictly a plant of the New World, from the fact of its occurrence in the floral decorations in Rome in the time of Raffaele.

The Chairman stated that botanists had always regarded the Maize as a plant of the New World, and the evidence that it was so was regarded by Alfonse De Candolle, in his recent work on the geographical distribution of plants, as quite complete.

Dr. Daubeny replied that if the Maize were a plant of the Old World they could hardly have failed to use it; and the fact of Raffaele's painting it might be accounted for by the interest all products from the New World were regarded with in his time.

Dr. Lankester drew attention to the physiological interest of the report just read. It would appear that the seeds which retained their vitality longest were those which had least albumen surrounding their embryos, as the Leguminosæ, whilst those which had large quantities of albumen, as the Gramineæ, lost their vitality soonest.

Dr. Steele stated that he had planted many seeds obtained from Egyptian mummies, but always failed to obtain any indications of their vitality.

Mr. Moore, of the Dublin Botanic Garden, related an instance in which he had succeeded in producing a new species of leguminous plant from seeds obtained by Mr. John Ball from a vase discovered in an Egyptian tomb. He also stated that he had picked from out of the wood of a decayed Elm, at least fifty years old, seeds of Laburnum, many of which had germinated when planted, and produced young trees. He had once grown a crop of young Barberry trees by planting a quantity of Barberry jam, which proved that the process of preparing the jam did not injure the seed. Many seeds grew the better for being placed in boiling water before they were set.

Dr. Daubeny stated that seeds did not retain their vitality whilst entirely excluded from the air; that in order to keep them well they should be wrapped up in brown paper, or some other porous material.

Mr. Archer stated that the seeds sent from China in air-tight vessels always failed to germinate. Some seeds kept much better than others.

Mr. Ogilby stated that some seeds germinated the better for being kept.

Mr. Nevins and Mr. Moore both confirmed this statement, and said that gardeners were in the habit of keeping Cucumber and Melon seeds in their pockets in order to insure their more efficient germination.—(*The Athenæum*.)

WINDOW GARDENING.—RAISING SEEDLINGS.

THE bother and trouble, together with the loss of time in attending to seedlings, induced me to try the experiment of raising succulents from seed "in a closed case" on the

same principle that we are now in the habit of growing Ferns. The idea first suggested itself about two months since, and was immediately put in practice in the following manner:—Having a wide-mouthed bottle, about four inches in diameter and eight inches high, I placed a few lumps of charcoal at the bottom, and over these sufficient light sandy soil to raise the whole to about three inches in height. After thoroughly moistening the soil, seeds of *Mammillaria quadrispina* were thinly scattered over the surface, and just covered with a little dry soil. The bottle was then tied down securely with thin sheet lead (tea lead), and set in the south window, the side next the sun being daubed over with paste to prevent scorching, if such could be possible. These were bottled up on the 22nd of last June, and have never been opened till a day or two since, and there are now between five and six dozen plants of this slow-growing tribe from an eighth to more than a quarter of an inch in height, nearly all showing spines, but many with numerous mammæ and their crowning tufts of elegant plumes.

I have watched the "rise and progress" of many a batch of "juveniles," but never in my life have I derived so much interest and real pleasure as in witnessing the changes which have taken place, from day to day, in the form and appearance of my present pets. Everything is here convenient for a close inspection, and with an eye-glass or a magnifying lens the minutest parts may be seen distinctly, and the progress watched, without in the least degree subjecting the plants to any injurious exposure in the process, which can scarcely ever be done under any other circumstances. It may thus be made a no mean ornament to the study table as well as the library, or even the drawing-room window; or it may be stowed in an attic window, on the tiles, or on a shelf in the greenhouse out of the way. Nor is the raising of seedlings the only use to which I have found it applicable. Cuttings of several species of *Opuntia*, *Rhipsalis*, &c., rooted and began to grow in a very short time, and long before similar pieces in the soil in a close frame showed any signs of rooting.

Ordinary pickle bottles are the cheapest and best articles for the purpose I have been able to meet with, and they have this advantage—that they may be obtained in almost every village; and I have every reason to believe that this will prove by far the best plan of striking many different plants, as it affords the surest means of preserving a *uniform* amount of moisture, with convenience for regulating the heat and light in proportion. I am, perhaps, premature in speaking of this plan before fully testing its capabilities; but I do so in the hope that others may give it a trial, and may have an opportunity of doing so before it has become too late in the season, and I trust it may afford as much gratification to other amateurs as it has done to myself.—W. K. BRIDGMAN, *St. Giles' Street, Norwich*.

P.S. Some of your contributors have recommended the cultivation of succulents. I have no doubt that many would gladly grow them, but unfortunately succulents, beyond a few of the commonest kinds, are difficult to be got at. Nurserymen do not keep them, because they do not pay; therefore one can only now and then pick up a cutting, an offset, or a sucker through the kindness of a friend, or by "way of exchange." By means of the latter, if the seed could only be procured of such species as are otherwise difficult of increase, a sufficient number of plants might be raised and sent by post in pill-boxes to carry on a system of exchange that might lead to the formation of good collections of them, and of their becoming as generally grown as Ferns now are. Perhaps some of your correspondents can help us in the matter.

ON BULLFINCHES AND TOMTITS.

SOME kinds of birds are great friends to gardeners by destroying grubs and noxious insects. Still there are times when some of them require a check; therefore we cannot agree with what Mr. Brent lately stated concerning Bullfinches and Tomtits. He observed that "there is always most fruit where these birds have destroyed the buds," meaning, we suppose, that they only destroy buds which contain insects that must have eaten them; but most fruit growers are

aware that Bullfinches often eat Gooseberry buds in spring by wholesale merely for the sake of food, and we need hardly say that such bushes are fruitless and injured, in some measure, for the next season. Indeed, we question if Bullfinches ever eat insects at all. We think that we have noticed this in these pages once before, and observed that poor Sparrows and Tomtits often got the blame of the injury they do also to the buds of other fruit trees, especially Cherries. Bullfinches' bills seem to be formed for crushing buds and seeds, and not for picking insects like the soft beaks of the Tomtits. We never observed these latter eating buds; their food is chiefly insects. Still they are often very mischievous in autumn by picking Peas out of the pods, and likewise holes in the stalk ends of Pears. We often put net over the fruit to keep off the little fellows, which do much good at other times; but we cannot say much in favour of Bullfinches, not even so much as we can for the Rooks, which sometimes destroy whole fields of young Turnips by pulling them up, expecting to find wireworms at their roots. Tomtits, especially the large kinds with a black band on their breasts, are most determined enemies to the bee-keeper in spring, as they go to the mouths of the hives, and rap with their beaks until the bees come out, when they kill them by wholesale. The entrances to straw hives are often quite worn or injured by these little mischievous birds.—J. WIGHTON.

ORIGINAL DOMESTIC RECEIPTS.

TO PRESERVE LARGE CUCUMBERS.—Take large and freshly-gathered cucumbers; split them down and take out all the seeds; lay them in salt and water that will bear an egg three days; set them on a fire with cold water and a small lump of alum, and boil them a few minutes, or until tender; drain them, and pour on them a thin syrup. Let them lie two days. Boil the syrup again, and put it over the cucumbers; repeat it twice more. Then have ready some fresh clarified sugar, boiled to a blow. Put in the cucumbers, simmer the sugar five minutes, and set it by till next day. Then boil the syrup and cucumbers again, and set them in glasses for use.

TO PRESERVE SMALL CUCUMBERS.—Weigh equal portions of small green cucumbers and of fine loaf sugar. Rub the cucumbers with a cloth, scald them in hot water, and put them into the syrup with some white ginger and the peel of a lemon. Boil them gently for ten minutes. The following day just let them boil, and repeat this three times, and the last boil them till tender and clear.

TO PRESERVE DAMSONS.—To every pound of plums allow three quarters of a pound of pounded loaf sugar; put into jars, alternately, a layer of damsons and one of sugar; tie them over with bladder or strong paper, and put them into an oven after the bread is withdrawn, and let them remain till the oven is cold. The following day strain off the syrup and boil it till thick. When cold put the damsons, one by one, into small jars, and pour over them the syrup, which must cover them. Tie them over with wet bladder.

TO PRESERVE DAMSONS.—Another Way.—Prick them with a needle and boil them with sugar, the same proportion as in the above receipt, till the syrup will jelly. Carefully take off all the scum.

TO PRESERVE GREENGAGES.—Put the plums into boiling water, pare off the skin, and divide them. Take an equal quantity of pounded loaf sugar, and strew half of it over the fruit. Let it remain some hours, and, with the remainder of the sugar, put it into a preserving pan. Boil till the plums look quite clear, take off the scum as it rises, and, a few minutes before taking them off the fire, add the kernels.

TO PRESERVE APPLES.—Pare, core, and quarter six pounds of good hard baking apples. Finely pound four pounds of loaf sugar, and put a layer of each, alternately, with half a pound of the best white ginger, into a jar. Infuse for half that time, in a little boiling water, half a pound of bruised white ginger. Strain, and boil the liquor with the apples

till they look clear, and the syrup rich and thick, which may be in about an hour. Take off the scum as it rises. When to be eaten pick out the whole ginger.

TO PRESERVE APPLES.—Another Way.—Weigh equal quantities of good brown sugar and of apples. Peel, core, and mince them small. Boil the sugar, allowing to every three pounds a pint of water. Skim it well, and boil it pretty thick; then add the apples, the grated peel of one or two lemons, and two or three pieces of white ginger. Boil till the apples fall, and look clear and yellow. Apples preserved in this way will keep for years.

TO PRESERVE PEARS.—Pare the fruit, and put it into a kettle with a little water, and boil. When quite soft take the same quantity of loaf sugar and melt it into a syrup, taking care not to have it boil. Put the fruit into the syrup, and set away in jars. When preserved in this way they retain their natural flavour and colour.

ON BEES IN AUGUST AND SEPTEMBER.

SOME bee-keepers consider August and September the best honey months, but, except in heath districts, we have always found bees collect most store in June and July. At that time in general flowers are fresh, and produce purer honey than afterwards. It is of little use to give bees more room in August with a view to excite them to make fresh combs to be stored with honey, especially after the drones are destroyed and the number of workers thinned by the aged ones dying off. Such often happened to colonies that were swarms of the current season, which contained old bees from the parent stocks. At one time we thought with others that bees might be united, and kept strong enough even to fill a hogshead, and continue so for years; but after-experience taught us the reverse. Our giant stocks weakened down to the common standard.

We should here note that, however great powers queen bees have to lay eggs and workers to rear brood, yet such cannot be excited, even by most skilful art, much beyond the nature and habits of the bees.

All spare honey should be taken from the hives in August, except it be very hot like to-day (August 24—83°), in a north aspect, in order that the bees may have time to make good the loss, or at least repair any little damage in their combs. As the season advances they seal or stop up with propolis little crevices to exclude air. In fact, bees always do so in summer, and carry it home on their thighs as they do pollen.

In heath districts bees gather much honey in August and September; but it is worthy of remark that they suffer more from cold springs than those do in more genial districts. This reminds us of Mr. Robson's remarks on this subject at page 281. He says that "the outlandish bee-keeper cares very little for bad weather, provided the month of August be fine, as the little industrious workers lay up sufficient that month for all the rest of the year." This is not only contrary to what we have just stated, but also to the real condition of bees in some heath districts. A friend who wrote to us this season from "among the Heather," observed that if the long and cold springs continued much longer there would hardly be a live colony of bees in the south of Scotland.

We should here state that honey is not their sole support. If the bees cannot gather fresh pollen in spring how can they rear their brood? And in bad weather fresh swarms cannot exist without food, or begin their combs without the means to secrete wax or gather propolis. Moreover, Mr. R. states, "I have never known so much honey in a straw hive as I have seen in a box, for the simple reason that straw hives are seldom or never so large." The boxes he speaks of are about one foot square, "perfect cribs in the inside dimensions;" and from one of them "he thinks that upwards of 150 lbs. of strained honey have been taken." But he should think again, for how can a box of that size hold so great a quantity of honey? Supposing there were eight divisions of combs in it at a foot square, each of these must have contained about 18 lbs. or 19 lbs. of honey, without allowing room for pollen and young bees. Indeed, the quantity of honey must have been equal to eight or nine

gallons of water. Saying more is needless, except that such false statements are nothing new; for Warder, who wrote on bees about a century and a half ago, speaks of "transparent boxes, so that with laying out four or five pounds in three or four years, if the summers are kind, you might get thirty or forty pounds per annum." The boxes he alludes to seem to have been collateral ones, which were in use as far back as the time of King Charles II. Warder was a physician, and, like most others of his day, had strange notions concerning bees. He even professed to bring dead ones to life again by keeping them warm in his breeches' pockets, the same way as old gardeners did Melon seeds to make them fruitful.

This brings to mind a curious story respecting a member of the medical profession who lived a few years back in Suffolk, who, on a bright wintry day when bees were induced to be out, collected several that were on the ground perishing from cold, intending to hold them in his hands until the warmth restored them, was suddenly summoned away, and, being a very forgetful person, slipped them into his pocket. He laid his clothes on his bed at night, and the warmth restored them, which he found out to the grief of his wife and himself.—J. WIGHTON.

QUERIES AND ANSWERS.

ROSES FOR A CALCAREOUS SOIL.

"I do not feel quite sure whether Mr. Beaton supplies dwarf Roses on their own roots for sale in small quantities; but I am just about this autumn to make a new Rose bed, east by south, in North Wiltshire, on a natural kind of calcareous soil. It is a very sunny spot, and I should require about two dozen. If you would undertake this commission might I trouble you to let me have a list with those marked which you most recommend for that aspect?" —H. S.

[Mr. Beaton has only about four or five dozen of Roses which he can call his own, and he would not part with them for three times their value. He never sold a Rose or took a commission to procure one for others. You are quite right to plant the Roses on their own roots, especially in your calcareous soil. Eight or ten kinds would be better in a bed of two dozen plants than twenty-four distinct kinds; indeed, in a regular bed there should be only three kinds of Roses, and the *Malmaison* Rose should be one of them north of London, and the same or *Devoniensis* to the southwest; *Baronne Prevost*, *Duchess of Sutherland*, *Coupe de Hêbe*, *Géant des Batailles*, *Général Jacqueminot*, *Baronne Hallez*, *Madame Laffay*, *Dr. Marx*, and *Robin Hood*, are among the best hybrid perpetuals for your situation; and of the Bourbons say the *Malmaison* (*Souvenirs de Malmaison*) as the best white; *Dupetit Thouars*, *Souchet*, and *Charles Souchet* as the highest coloured; also *George Cuvier*, *Queen of Bourbons*, and *Paul Joseph*; but none of these, after *Dupetit Thouars*, will do any or much good unless they are purely and simply on their own roots and in the very richest Rose compost that can be made. The Manetti stock for dwarf Roses has been proved in the Experimental Garden to be either a genteel way of killing Roses in two years, or to have them attended to like Docks, Thistles, and Bindweeds to keep down the suckers. The Dog Rose is bad enough where the soil is not good for it; but the better the soil is the more trouble with this Manetti, though it might be made a most useful stock, nevertheless, if they had the gumption to make the cuttings of it anti-sucker fashion in the first instance.]

LACHENALIA TRICOLOR MACULATA.

"I send a few bulbs of the *Lachenalia tricolor maculata*, which I hope you may be successful in flowering. It is, perhaps, out of place for me to mention to you my treatment of this flower; but I find that old bulbs packed as closely together as possible in the pot flourish and flower profusely." —E. B.

[Many thanks for the bulbs of this plant. Your experience

goes to prove a fact which is not generally known, namely, that all the soft bulbs from the Cape do better if they are "packed as closely together as possible" in pots and in the open ground; and Dr. Herbert's explanation of that is this—the soil lies lighter over them, and the drainage is much assisted. It is never "out of place" to make such practical remarks.]

STANDARD ROSES.—MANETTI STOCKS, &c.

"Can you give me the name of the inclosed plant, which I hope will arrive fresh? It is of a bright orange, with a dark, rough leaf, and the smell very offensive. It is, however, a very showy plant, and was sent to me by a nurseryman with some Heliotropes, which it seems to resemble in its growth."

[Your plant is *Lantana crocea*.]

"Have you the *Tom Thumb* Fuchsia, a compact little shrub about a foot high, and hardy, and the double sweet-scented Nasturtium, a perennial, though tender, and very pretty? If not, I recommend them, and believe that they are neither of them common. My garden, the plan of which you were pleased to engrave in your number of November, 1854, is looking well this year. The summer Roses pegged down were splendid in June; the weather then was very hot. The hybrid perpetuals were not nearly so good, and I do not succeed with a group of standards in a clump. Both the Manetti and Dog Rose stocks are continually throwing out suckers there. The standards do better which are placed singly in other parts of the garden. When Roses have bloomed particularly well one season they seem to be exhausted, and do not do so well the next. Should they in this case be moved?"—A LADY.

[We have very often recommended the *Tom Thumb* Fuchsia for edgings; also the little dwarf, double Nasturtium, which makes a nice patch. We cannot help having suckers from Dog Roses, which are propagated by nature; but it is disgraceful for a third-class nurseryman ever to see a sucker from the Manetti, which he propagates on purpose for a better stock. We would make it conditional not to pay our Rose bill if one sucker appeared on fifty Manetti stocks, or on 500 of them in five years. A bed of standard Roses never looked well yet, and never will. You should plant one row of good, bushy, dwarf Roses round them, at least, to make them tolerable in a flower garden. In mixed borders, and standing singly along the walks in the centre of circles of a yard or four feet in diameter, are the only good situations for standards in a flower garden where there is no rosary. A rosary is a very different thing from a flower garden, and in it standard Roses are at home, and may be disposed of in any way one fancies, and they never come amiss. Amateurs who grow little else but Roses make large clumps of them; but that is a different style altogether from flower gardening. If the standard Roses have grown very luxuriantly they should be replanted at the end of October, but not if they are stunted from the last planting.]

TO CORRESPONDENTS.

GERANIUM CUTTINGS (*Bromley*).—You cannot be serious. There is not a word about how they manage their cuttings at the Crystal Palace in the whole of *THE COTTAGE GARDENER*, and certainly you cannot think they leave out their cuttings *there* in winter.

PEACH TREES (*J. S. L.*).—Your tree is completely covered with scale, and you may be thankful if it should ever get over it. They should have been washed off with a brush as soon as you detected one of them. If all are as bad as the bit sent we should advise uprooting the tree and planting another. In the meantime, if not quite so bad, wash each twig and leaf left with soap water, and then syringe with clean, and when the leaves are all gone paint over the old wood with clay paint, holding a good portion of soft soap and sulphur in it, especially the latter. We fear your greenhouse plants will be affected. We used to be troubled with the same pest in our Peach house, and got rid of it by smoking the house with sulphur after the leaves had fallen. If the wood is not ripened, however, the sulphur smoking will kill it, and everything else that is green and growing at the time.

PROLIFIC SWARM OF BEES.—"In my article in the last number on this subject there are two or three errors in the figures, not, perhaps, very important in themselves, but, as they do not tally with the weights given in the following article on the Stewarton hives, may cast an air of untruth over both articles. I may just, therefore, mention that the weights as given in the account of the Stewarton hives are correct, and the exact weight of the honey and of the four existing stocks obtained from one swarm of last year is 102 lbs., not 120 lbs."—W. B. TEGETMEIER.

NAMES OF PLANTS (*An Old Subscriber*).—Your plant is the common double Soapwort, *Saponaria officinalis pleno*. This double variety has been found wild in many places; for instance, at Haughmond Abbey, Shrewsbury, at north Glenham, in the road to Sweffling, between Cheriton and Bramdean, Hants; in the road to Sittingbourne, Kent; at Cornforth, Lancashire; and many other places in England and Ireland. This double variety is often cultivated in gardens as an ornamental plant. Bruised and agitated with water it makes a lather like soap, which removes grease spots; hence its name, and "Fuller's Herb," as it is sometimes called.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

OCTOBER 1st and 2nd. WORCESTER. Sec., Mr. G. Griffiths, 7, St. Swithin Street, Worcester. Entries close Sept. 19th.
OCTOBER 7th. SOUTH WEST MIDDLESEX AGRICULTURAL SOCIETY. At Gunnersbury Farm, Ealing. Sec., J. Gotelee, Hounslow.
OCTOBER 8th. BUCKS AGRICULTURAL SOCIETY. Sec., Mr. Charles Fuller, Chiltern House, Wendover, Bucks. Entries close Sept. 24.
NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.
DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.
DECEMBER 30th and 31st. BURNLEY AND EAST LANCASHIRE. Entries close December 1st. Secs., Mr. Angus Sutherland and Mr. Ralph Landless.
JANUARY 1st, 1858. PAISLEY. Poultry, Pigeons, and Fancy Birds. Sec., Mr. W. Houston, 14, Barr Street, Paisley.
JANUARY 4th, 1858. KIRKCALDY POULTRY AND FANCY BIRD SHOW. Sec., Mr. Bonthron, jun., Thistle Street.
JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE. ham.
JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.
FEBRUARY 3rd and 4th, 1858. PRESTON AND NORTH LANCASHIRE. Secs., Mr. R. Teebay and Mr. H. Oakey, Preston.
N.B.—Secretaries will oblige us by sending early copies of their lists.

GLOUCESTER POULTRY SHOW.

THE first Exhibition of the Gloucester Society took place on Monday, the 7th, and the following days, in a most commodious temporary wooden building erected in a field close to the town. The entries were between 500 and 600 in number, and included birds from many of our most successful exhibitors. The prize-list was beyond all question the most liberal that has ever been issued. In the classes for old birds there were three prizes of £20, £5, and £2 respectively, and in the chicken classes three prizes of £10, £2, and £1. In consequence of its being originally stated that the Show would not be carried out unless there were 1000 pens entered, and also from the fact that the whole responsibility rested on one individual, many persons did not enter their birds; but the suspicions were unfounded, for the Show has been carried out, and with a degree of spirit and energy that has not often been witnessed. Mr. Churchill, jun., took all the labour upon himself, replying to every letter by return of post, superintending every necessary arrangement, being untiring in his energy and liberal in his expenditure.

As to the payment of the prizes, in which matter some persons imagined that there might be a difference from the course generally pursued, we can state that there were two most important differences, so that the suspicions were not unfounded. Firstly, that instead of pieces of plate chosen by the Committee, the winners had orders given to them by which they were enabled to go and select useful instead of useless articles from the silversmiths in the town; and, secondly, that the prizes were paid in the Show, so that several of the successful exhibitors took home their silver teapots, &c., on the evening of the opening day. Mr. Churchill did not wait to see whether the Exhibition paid, but he paid at once; and should it turn out that the Show, from the very unfavourable weather, has entailed any severe pecuniary loss, we can only throw out a hope that the winners may present, in their turn, a piece of plate to by far the most deserving man connected with the Exhibition, namely, the Honorary Secretary.

In the classes the *Game* came first, Mr. Rothschild and Captain Hornby dividing the prizes for the old *Reds*. In the *Black Red* chicken class Mr. Dyer took first; but the gem of the collection was Mr. Cox's third prize pen, though not equally forward with his second prize birds.

In *Dorkings* Mr. Titterton took first with a pen that was

immediately bought by an old exhibitor for £10 10s. The old birds were generally much out of condition. In Dorking chickens the Rev. S. Donne took first and third, and Captain Hornby second.

In old *Spanish* Mr. Botham sent two of his unequalled hens and a superb cock. His face, however, had been somewhat pecked, to which may be attributed his having the second prize, Mr. Brundrit taking first. Spanish chickens as before, and as will be again for some time to come, Mr. Rodbard first, Mr. Jones second.

The old *Buff Cochins* were very much out of condition, and looked their worst. In *Cochin* chickens Mr. Stretch's third prize *Buffs* were a magnificent pen, worthy the old palmy *Cochin* days. The Rev. G. F. Hodson took second with *Partridge*.

In *Silver-pencilled Hamburg* Mr. Archer was passed over without a prize, the Rev. T. L. Fellowes coming first with two very good pens. The *Golden* and *Silver-pencilled Hamburg* chickens competed together. Here Mr. Archer held his own, taking first and third with *Silvers*. A commended pen of *Golden* belonging to Mr. Fielding was remarkably good. There were only four pens of *Golden-spangled*, but all three prizes were deservedly awarded. Mr. Banke's first prize pen contained a cock as nearly perfect as possible, and the two hens of Mr. Lane were of extreme beauty of spangle.

The old *Polish* showed to very poor advantage, being sadly out of feather. First, *Silvers*, withheld, the second going to a cock with an indifferent crest. In the *Polish* chickens all colours competed together, and here the highest commendation, at least in the opinion of all the visitors to the Show, was due, not to any birds at all, but to the Judges themselves, who had the honesty to disqualify the best pen of *Black Polish* chickens because the cock's white legs had been painted, and the Committee had the manliness to print the disqualification in the prize-list, although the birds had won at the Crystal Palace. In this class Mr. Adkins deservedly took first with a pen of *Silvers*, containing a young cock that is, perhaps, the most perfect we have ever seen; his wing and crest could not be improved. Mr. Jones's first prize *Sheffield* and *Crystal Palace* pen by some mistake got into the wrong class, so its chance was out.

In the *distinct breed* class there were several good pens of *Brahmas*, both old and young, and a remarkably fine show of *Malays*. Mr. Leighton took first, Mr. Fox second, and a remarkably good pen of Mr. Rogers' was unfortunately in a corner where it could hardly be seen.

In the *single cock* classes there were some very good birds, especially *Cochins*. Mr. Lamb's first prize was "as big as a house dog," as a visitor remarked; Mr. Tomlinson's second was a very fine bird. In the *Sebrights* Mr. Craigie's prize *Golden* were a very nice pen; good comb, carriage, size, and lacing: they were marked "sold." It is needless to say anything about the *Aylesbury Ducks*. Every one must know where the prizes went, where, of course, they should go, viz., to Aylesbury.

In the *Pigeon* classes the *Pouters* were out of feather, and the first prize withheld. Generally speaking, the *Pigeons* were not well seen, the framework of the wire front darkening the pens so much that the birds were obscured. In the *extra variety* class we were glad to see that Mr. Adkins's beautiful *Australian Bronze-wings* had an *extra* prize awarded to them. We are always glad to see them, but they have no right whatever to gain prizes to the exclusion of any variety of the domestic *Pigeon*, being a totally distinct species of bird, even placed by naturalists in a different genus, that will not interbreed with our domesticated varieties, and incapable of alteration by domestication. As well might a zebra take a prize in a class for horses, or the gulls that were sent for sale to Gloucester as another variety of ducks. Nevertheless, where an *extra* prize can be awarded they are always worthy of it, and are an ornamental addition to any show.

The Judges were Mr. Hindson, of Liverpool, and Mr. Stead, of Leeds, for Poultry; and Mr. Cottle, of Cheltenham, for Pigeons. We subjoin the prize-list.

GAME (Black-breasted and other Reds).—First and Third, Mr. N. M. de Rothschild, Gunnersbury Park, Acton, Middlesex. Second, Capt. W. W. Hornby, R.N., Knowsley, Lancashire. *Chickens*.—First, N. N. Dyer, Esq., Manor House, Bredon, near Tewkesbury, Worcestershire. Second and Third, W. Cox, Esq., Brailsford Hall, Derby. Highly Commended, Capt. W. H. Snell, Thornton Heath, Croydon.

GAME (Duckwings and any other variety).—First, J. Wright, Esq., Hulland Hall, Ashbourne. Second, Mrs. Parkinson, Knapthorpe, Newark, Notts. Third, Rev. G. Cruwys, Cruwys Morchard Court, Devon. *Chickens*.—First, J. Wright, Esq. Second, Mr. J. R. Rodbard, Aldwick Court, Somerset. Third, Mr. R. Swift, Southwell, Notts. Commended, Capt. W. H. Snell.

DORKINGS.—First, Mr. C. R. Titterton, Birmingham. Second, Capt. W. W. Hornby, R.N. Third, Mrs. Parkinson. Highly Commended, Mr. H. Ransom, Holbrook, Suffolk; Rev. S. Donne, Oswestry, Salop. Commended, Mr. W. Bromley, 19, Smithfield, Birmingham. *Chickens*.—First, Rev. S. Donne. Second, Capt. W. W. Hornby, R.N. Third, Rev. S. Donne. Highly Commended, Mr. E. Archer, Malvern; Rev. S. Donne; Mr. C. H. Wakefield, Malvern Wells, Worcestershire. Commended, Mr. W. Bromley; Dr. Hewson, Cotton Hill, Stafford; Rev. S. Donne.

SPANISH.—First, Mr. W. W. Brundrit, Runcorn, Cheshire. Second, Mr. G. Botham, Wexham Court, Bucks. Third, Mr. R. W. Fryer, Hinton Road, near Hereford. *Chickens*.—First, Mr. J. R. Rodbard. Second, Mr. P. H. Jones, Fulham. Third, Mr. J. K. Fowler, Prebendal Farm, Aylesbury, Bucks.

COCHIN-CHINA (Cinnamon or Buff).—First, Mr. T. Stretch, Bootle, Liverpool. Second, Mrs. H. Fookes, Whitechurch, Dorset. Third, Rev. S. Donne. Commended, Mr. R. W. Fryer; Mr. T. Stretch.

COCHIN-CHINA (any other colour).—First, Rev. G. F. Hodson, North Petherton, Somerset. Second, Mr. G. C. Adkins, Edgbaston, Birmingham. Third, Miss Musgrove, West Bank, Aughton, near Liverpool. *Chickens*.—First, Mr. J. W. Kellaway, Ryde, Isle of Wight. Second, Rev. G. F. Hodson (Partridge). Third, Mr. T. Stretch. Highly Commended, Mr. R. W. Fryer; Rev. G. F. Hodson (Partridge); Mrs. Robinson, Mansfield Woodhouse, Nottingham (Buff); Mr. T. Stretch. Commended, Mr. P. Cartwright, Oswestry, Salop; Mr. R. Chase, Moseley Road, Birmingham (Buff); Mr. J. K. Fowler; Mrs. Herbert, Powick, Worcester.

HAMBURGS (Silver-pencilled).—First, Rev. T. L. Fellowes, Beighton Rectory, Norfolk. Second, Mr. J. Clift, Dorking, Surrey. Third, J. Dixon, Esq., Bradford. Commended, Mr. E. Archer.

HAMBURGS (Gold-pencilled).—Second, Rev. T. L. Fellowes. Third, Mr. W. Bankes, Weston, Cheshire. *Gold and Silver-pencilled Chickens*.—First and Third, Mr. E. Archer. Second, Mrs. Parkinson. Commended, Mr. J. Brundrit, Runcorn, Cheshire; J. Dixon, Esq.; Mr. J. Fielding, Newchurch, Manchester; the Hon. Miss Russell, Kirby Mallory, Leicester.

HAMBURGS (Silver-spangled).—Third, Mr. G. Botham.

HAMBURGS (Gold-spangled).—First, Mr. W. Bankes. Second, Mr. W. R. Lane, Edgbaston. Third, J. Dixon, Esq. *Gold and Silver-spangled Chickens*.—Second, Capt. Beardmore, Uplands, near Fareham, Hants. Third, Mr. J. Newick, Hinton St. George, Somerset.

POLANDS (Silver-spangled).—Second, Mr. J. Brundrit. Third, Mr. J. F. Greenall, Grappenhall Hall, Chester.

POLANDS (Gold-spangled).—First, Mr. J. F. Greenall. Second, Mr. R. H. Bush, Litfield House, Clifton, near Bristol. Third, J. Dixon, Esq.

POLANDS (any other colour).—First, Mr. G. C. Adkins. Second, J. Dixon, Esq. Third, Mr. T. Battye, Brownhill Upper Mill, York. *Chickens*.—First, Mr. G. C. Adkins. Second, Mr. G. Ray, Ivy Cottage, Minstead, Hants. Third, Mr. T. P. Edwards, Lyndhurst, Hants.

FOR THE BEST COCK AND TWO HENS, OR COCK AND TWO PULLETS (any other distinct breed not named in the foregoing classes).—First, Mr. J. H. Craigie, Greenhithe, Kent (Brahma Pootra). First, Mr. H. Lingwood, Needham Market, Suffolk (White Dorkings). First, Mr. J. Leighton, Cheltenham, Gloucestershire (Malay). Second, Rev. F. Thursby, Abington Rectory, Northampton (Brahma Pootra). Second, Mr. H. Lingwood (White Dorkings). Second, Mr. J. J. Fox, Devizes, Wilts (Malay). Highly Commended, Mr. W. Dawson, Hopton Mirfield, York (Sultans). Commended, Rev. T. L. Fellowes (Black Hamburg).

GAME COCKS (of any age or colour).—First, Mr. J. R. Rodbard. Second, Mr. W. Bagg, jun., Calver Street, Colchester. Third, Mr. E. Archer. Highly Commended, W. Cox, Esq.; N. N. Dyer, Esq.

DORKING COCKS (of any age).—First, Mrs. Pattison, Maldon, Essex. Second, Mr. H. Lingwood. Third, Capt. W. W. Hornby, R.N. Commended, Mr. T. Williams, Reading, Berks.

SPANISH COCKS.—First, Mr. W. Brundrit. Second, Mr. J. K. Fowler. Third, Mrs. J. C. Hall, Sheffield.

COCHIN-CHINA COCKS.—First, Mr. W. Lamb, Colsterworth, Lincoln. Second, Mr. H. Tomlinson, Balsall Heath Road, Birmingham. Third, Mr. H. James, Walsall, Stafford. Commended, Mr. J. K. Fowler.

HAMBURGH COCKS.—First, Mrs. Parkinson. Second, Mr. E. Archer. Third, Mr. W. Bankes.

POLAND COCKS.—First, Mr. J. J. Fox. Second, Mr. T. P. Edwards. Third, Mr. G. C. Adkins.

BANTAMS (Gold and Silver-laced).—First, Mr. G. Bradwell, Southwell, Notts. Second, Mr. U. Spary, Hertford. Third, Mr. J. H. Craigie, Greenhithe, Kent. Highly Commended, Rev. G. Cruwys. Commended, Mr. J. J. Fox.

BANTAMS (any other variety).—First, the Hon. W. W. Vernon, Wolseley Hall, Stafford (Black). Second, Mr. R. W. Fryer (White). Third, Mr. T. Williams (Black). Commended, Mr. J. J. Fox (White).

DUCKS (Aylesbury).—First and Third, Mr. J. K. Fowler. Second, Mr. J. Weston, Aylesbury, Bucks. Commended, Mr. J. Weston.

DUCKS (any other variety).—First, Mr. J. K. Fowler (Rouen). Second, Mr. B. H. Brooksbank, Tickhill, Rotherham (Rouen). Third, Miss Perkins, Sutton Colefield, Warwick (Buenos Ayres). Commended, Mr. J. K. Fowler (Rouen); Mr. J. R. Rodbard (Rouen).

PIGEONS.—*Pouters*.—Second, Mr. G. C. Adkins. *Carriers*.—First, Mr. E. A. Lingard, Birmingham. Second, Mr. J. Percival, Harbourne, near Birmingham. Commended, Mr. Billyeald, Hyson Green, Nottingham. *Tumblers*.—First, Mr. E. A. Lingard. Second, Mr. G. C. Adkins (Almond). Highly Commended, Mr. J. Percival (Black Mottled and Almond). *Jacobins*.—First, Mr. G. C. Adkins. Second, Mr. J. Percival, Walworth, Surrey. *Fantails*.—First, Mr. J. Billyeald. Second, Mr. C. R. Titterton. Highly Commended, Mr. G. C. Adkins. *Runts*.—First, Mr. E. A. Lingard. Second, Mr. J. Choyce, jun., Harris Bridge, Atherstone. *For the best Pair, any other variety*.—Prize, Mr. A. Foster, North Petherton, Bridgewater (Helmets). Prize, Mrs. Parkinson (Blue

swallows). Prize, Mr. C. R. Titterton (Trumpeters). Extra, Mr. G. Adkins (Australian Bronze-wings, as a variety of the group). Commended, Mr. W. Appleby, jun., Burton-on-Trent (Dragoons). Mr. G. Hopkins, George Street, Plymouth, Devon; Mr. C. R. Titterton (Victorias); Mr. G. Warren, Merthyr Tydfil, Glamorganshire (Frillback).

DEWSBURY POULTRY SHOW.

THE above Show was held on the 2nd inst. in a large field adjoining the town, and but for the unfavourable state of the weather would have been the most successful Exhibition of the Society, as we deem progress to consist more in the quality of the stock exhibited than in the number of entries. The prize birds in most of the classes, even comprising those where there was the least competition, were fit for exhibition in any show in the country. Reference to the prize-list below will show the names of some of our oldest veterans in this peaceful warfare.

The show of *Spanish* fowls was of first-rate character. The silver cup prize was won by Mr. Ridgway with adult birds, who also carried off both prizes for chickens of the same class by birds of great promise. The *Game* fowls were considered excellent, and we think the cup pen of Duckwing chickens, the second prize Black Red chickens, and the first prize White chickens, were three as good pens as will be seen this season. In the first prize Black Red chickens we thought the cock bird good, but the pullets did not strike us as equal to the second pen. The *Poland* classes contained some most excellent birds. Mr. Dixon's Silver Poland chickens we unhesitatingly affirm were the best we have seen this season, as were also the Golden-spangled *Hamburgh* chickens exhibited by Mr. Haigh, to which the *Hamburgh* cup was awarded. The *Rouen Ducks* exhibited by Mr. R. Smith were large and good. The *Sebright Bantams* were beautifully laced, but the Silvers in most of the pens had an appearance of crossing with Gold-laced. Two pens of *Game Bantams* exhibited by Mr. Stansfield were well deserving of their honours, though obtained without competition. His first prize pen of Duckwings is worthy of especial notice. The Bantam cup was awarded to a pen of Black exhibited by Mr. Ridgway. There was a considerable display of *Pigeons*, and every variety was well represented.

Mr. Floyd, of Holmfirth, acted as Judge.

EXTRA PRIZES.

A Silver Cup, value three guineas, for the exhibitor showing the best pen in the *Hamburgh* classes—G. Haigh, Holmfirth (Golden-spangled chickens).

A Silver Cup, value three guineas, for the best pen of *Spanish*—M. Ridgway, Dewsbury.

A Silver Cup, value three guineas, for the best pen of *Game*—G. Noble and Ineson (Duckwing chickens).

A Silver Cup, value three guineas, for the best pen of *Bantams*—M. Ridgway, Dewsbury (Black).

A Silver Cup, value three guineas, for the most meritorious pen in the *Cochin*, *Dorking*, or *Malay* classes—W. Dawson (adult White Cochins).

A Silver Cup, value three guineas, for the most meritorious pen in the *Poland* classes—T. Battye, Holmbridge (adult Silver).

COCHIN-CHINA.—First, W. Dawson, Hopton Mirfield. Second, M. Ridgway, Dewsbury. *Chickens.*—First, W. Dawson, Hopton Mirfield. Second, Mrs. A. Watkin, Walkley, near Sheffield.

SPANISH.—First, M. Ridgway, Dewsbury. Second, J. Dixon, Bradford. *Chickens.*—First and Second, M. Ridgway, Dewsbury.

DORKINGS.—Prize, M. Ridgway, Dewsbury. *Chickens.*—Prize, J. H. Smith, Kent House, Halifax.

MALAYS.—First, J. Dixon, Bradford. Second, M. Ridgway, Dewsbury.

HAMBURGHS (Golden-spangled).—First, J. Dixon, Bradford. Second, W. D. Henshall, Huddersfield. *Chickens.*—First, G. Haigh, Liphill Bank, Holmfirth. Second, J. Dixon, Bradford.

HAMBURGHS (Silver-spangled).—Prize, J. Dixon, Bradford. *Chickens.*—First, J. Dixon, Bradford. Second, G. Fearnley, M.D., Grove House, Dewsbury.

HAMBURGHS (Golden-pencilled).—First, J. Dixon, Bradford. Second, B. Peacock, Dewsbury. *Chickens.*—First, J. H. Smith, Kent House, Halifax. Second, J. Dixon, Bradford.

HAMBURGHS (Silver-pencilled).—First, J. Dixon, Bradford. Second, R. Smith, Dewsbury Moor. *Chickens.*—First, J. Dixon, Bradford. Second, R. Smith, Dewsbury Moor.

POLANDS (Black, with White Crests).—First and Second, J. Dixon, Bradford. *Chickens.*—First, T. Battye, Holmbridge. Second, G. Haigh, Holmfirth.

POLANDS (Golden-spangled).—First, J. Dixon, Bradford. Second, G. Heaton, Chickenley. *Chickens.*—Prize, J. Dixon, Bradford.

POLANDS (Silver-spangled).—First, T. Battye, Holmbridge. Second, J. Dixon, Bradford. *Chickens.*—First, J. Dixon, Bradford. Second, T. Battye, Holmbridge.

GAME (Black-breasted and other Reds).—First, W. F. Fox, Dewsbury. Second, J. Healey, Hepworth. *Chickens.*—First, J. H. Smith, Kent House, Halifax. Second, W. M. Marriott, Boothroyd.

GAME (White and Piles).—First, G. Haigh, Holmfirth. Second, W. F. Fox, Dewsbury. *Chickens.*—First, G. Haigh, Holmfirth. Second, J. H. Smith, Kent House, Halifax.

GAME (Black and Brassy-winged except Greys).—First, M. Ridgway, Dewsbury. Second, J. Dixon, Bradford. *Chickens.*—First, G. Noble and Ineson, Heckmondwike. Second, W. M. Marriott, Boothroyd.

GAME (Duckwings and other Greys and Blues).—First, J. Healey, Hepworth. Second, W. F. Fox, Dewsbury. *Chickens.*—First, G. Noble and Ineson, Heckmondwike. Second, G. H. Rhodes, Heckmondwike.

BANTAMS (White).—First, J. Crossland, jun., Wakefield. Second, W. Dawson, Hopton Mirfield.

BANTAMS (Black).—First and Second, M. Ridgway, Dewsbury.

BANTAMS (Silver-laced).—First, J. Dixon, Bradford. Second, J. Crossland, jun., Wakefield.

BANTAMS (Gold-laced).—First, J. Dixon, Bradford. Second, S. Schofield, Heckmondwike.

BANTAMS (any other distinct breed).—First and Second, E. Stansfield, Dewsbury (Duckwing Game and Game).

ANY BREED NOT MENTIONED IN THE ABOVE CLASSES.—First, J. Dixon, Bradford (Brahma). Second, H. Child, jun., Birmingham (Sultans).

CHICKENS (any other breed).—First, Mrs. A. Watkin, Walkley, near Sheffield (Sultans). Second, J. Dixon, Bradford (Brahma Pootra).

COCK (of any breed).—First, W. F. Fox, Dewsbury. Second, M. Ridgway, Dewsbury.

HEN (of any breed).—First, M. Ridgway, Dewsbury. Second, W. F. Fox, Dewsbury (Game).

GUINEA FOWLS.—First and Second, W. D. Henshall, Huddersfield.

DUCKS (White).—First, J. Dixon, Bradford. Second, S. Exley, Heckmondwike.

DUCKS (Rouen).—First, R. Smith, Dewsbury Moor. Second, J. Dixon, Bradford.

GEESE.—Prize, S. Hebblethwaite, Mirfield.

POULTRY AT THE CALDER VALE AGRICULTURAL SOCIETY'S SHOW.

WE gave the list of prizes last week, and now borrow the following notes from the *Halifax Guardian* :—

"The entries this year were 154; last year 136; and the display, particularly of *Red Game* chickens, was the finest seen this year. The winner of the first prize was the winner of the cup at Bradford last week. There were, however, no *Dorkings* shown; no entries of *Geese* or *Goslings*; and only two in *Turkeys*, *Rouen Ducks*, *Polands* and *Poland chickens*, and *White Game*. Double the number of *Pigeons* were shown this year; and the display in *Carriers*, *Powters*, and *Dragons* was very fine, especially in the first of these classes. It is worthy of note that in *Carriers* and *Powters* the decision of the Judges at Halifax reversed that given last week on the same birds at Bradford—a proof, possibly, of the difference of stress on special "points" laid by different Judges, but certainly of the very close approximation in excellence of the birds shown. Mr. H. Child, jun., of Birmingham, was the sole exhibitor of *Rabbits*, and only showed one in each of the four classes."

SOWERBY BRIDGE PIG AND POULTRY SHOW.—SEPTEMBER 4TH.

THE fourth annual Show of the Sowerby Bridge Pig and Poultry Association was, by the kindness of John Radcliffe, Esq., again held in the park attached to Allan House, near to the line of the Lancashire and Yorkshire Railway. But for the very unpropitious weather the Exhibition, taking it altogether, would have been one of the most successful that has been held at Sowerby Bridge. The coldness of the day, however, and the heavy and frequent storms of rain, had the effect of keeping the great bulk of visitors at home, and of causing the stock to appear to a great disadvantage. To walk across the wet grass to that portion of the grounds in which the Show was held, and, when once there, to stalk through the mud that had been created by the trampling of men and beasts, at the same time attempting, by means of an umbrella, to protect one's self from the falling rain, was anything but pleasant; and it was not, therefore, surprising to find an extremely limited attendance on the grounds, and, up to two o'clock, the smallest possible number of the fair sex, namely, one lady only.

By holding their Exhibitions earlier in the season the Society would lose nothing, but gain much. The birds would then be in better condition; collisions with other similar shows in the neighbourhood (which was this year felt rather severely in the pens of poultry) would be avoided; and the chances against stormy weather would be lessened. The principal objection to this would be that the vegetables would not be so well developed as those now exhibited at these Shows.

It has often been urged by Judges and others that no stronger incentive can be offered to stock breeders and poultry fanciers than that occasioned by a liberal offer of silver cups, and certain it is that the good people of Sowerby Bridge are not behindhand in this respect. The Association does well in awarding above £100 as prizes; but the gentlemen of the district do still better in presenting as many as seven silver cups, one of which (that given by the President of the Association, James Fielding, Esq.) is of the value of five guineas, each of the others being worth three guineas.

The poultry, particularly the older kinds, suffered greatly from the cold and wet. There was also a perceptible falling off as regards number, a large number of pens having been offered to the Committee when it was too late to enter them. Nevertheless, there were many fine birds shown, the *Spanish* being, perhaps, the best. In consequence of the wet the beautiful marks on the Pencilled fowls were scarcely discernible. Mrs. Smith, of Kent House, Halifax, and Mr. Dixon, of Bradford, were among the principal exhibitors; but high though they stand as rearers of poultry, and numerous as were the prizes which they carried off, they were beaten at Sowerby Bridge in several of the classes.

The poultry, pigeons, and rabbits were judged by Mr. Challinor, of Whitwell, Worksop; and Mr. Pearson, of Leeds. Appended is the prize-list.

EXTRA PRIZES.

The Cup given by C. Barstow, Esq. (clerk to the local Board of Health), for the best pen of Spanish fowls—S. H. Hyde, Moss Cottage, Ashton-under-Lyne.

The Cup given by W. Edlestone, Esq., for the best Dorking or Cochinchina fowls—John Robinson, Vale House, Garstang.

The Cup given by the Committee, for the best pen of Game fowls—Wm. Johnson, High Grounds, Worksop.

The Cup given by the Committee, for the best pen of Hamburg fowls—M. H. Broadhead, Holmfirth.

SPANISH.—First, S. H. Hyde, Moss Cottage, Ashton-under-Lyne. Second, J. Dixon, Horton Park, Bradford. **Chickens.**—First, M. Ridgway, Dewsbury. Second, J. Dixon, Horton Park, Bradford.

DORKINGS.—First, J. Robinson, Vale House, Garstang. Second, Mrs. A. Watkin, Walkley, near Sheffield. **Chickens.**—First and Second, J. Parsons, Audenshaw, near Ashton-under-Lyne.

COCHIN-CHINAS.—First, M. Ridgway, Dewsbury. Second, Mrs. A. Watkin, Walkley, near Sheffield. **Chickens.**—First, J. Robinson, Vale House, Garstang. Second, W. Harvey, Upper Thorpe, Sheffield. Highly Commended, W. Stott, Sowerby Bridge.

GAME (Black-breasted and other Reds).—First, W. Johnson, High Grounds, Worksop. Second, J. Dixon, Horton Park, Bradford. **Chickens.**—First, Bullock and Rapson, Leamington. Second, T. Greenwood, Huddersfield. Commended, Mrs. W. Smith, Kent House, Halifax.

GAME (Duckwings or any other variety).—First, W. Johnson, High Grounds, Worksop. Second, J. Dixon, Horton Park, Bradford. **Chickens.**—First, Rev. T. E. Abraham, Ormskirk. Second, Mrs. W. Smith, Kent House, Halifax. Commended, Mrs. W. Smith.

HAMBURGS (Golden-spangled).—First, M. H. Broadhead, Holmfirth. Second, J. Dixon, Horton Park, Bradford. **Chickens.**—First, M. H. Broadhead, Holmfirth. Second, J. Murgatroyd, Upper Longbottom, Warley.

HAMBURGS (Silver-spangled).—First, Mrs. H. Sharp, Bradford. Second, J. Dixon, Horton Park, Bradford. **Chickens.**—Prize, Mrs. H. Sharpe, Bradford.

HAMBURGS (Golden-pencilled).—First, W. Harvey, Upper Thorpe, Sheffield. Second, J. Dixon, Horton Park, Bradford. **Chickens.**—First, Mrs. H. Sharp, Bradford. Second, J. Crabtree, Branch, Shipley.

HAMBURGS (Silver-pencilled).—First, Mrs. H. Sharpe, Bradford. Second, E. Gaukrodger, Hebden Bridge. **Chickens.**—First, Mrs. H. Sharp, Bradford. Second, J. Dixon, Horton Park, Bradford.

POLANDS.—First, A. G. Waithman, Wheatley. Second, J. Dixon, Horton Park, Bradford. **Chickens.**—First, J. Dixon, Horton Park, Bradford. Second, M. Ridgway, Dewsbury.

BANTAMS.—First, J. Dixon, Horton Park, Bradford. Second, M. Ridgway, Dewsbury. Commended, N. Crowther, West End, Sowerby Bridge.

ANY AGE OR BREED NOT ENUMERATED IN THE SCHEDULE.—First, Mrs. Watkin, Walkley, Sheffield. Second, W. Dawson, Hopton Mirfield. Commended, Mrs. H. Sharp, Bradford.

GESE.—Prize, F. E. Rawson, Thorpe.

TURKEYS.—Prize, H. Edwards, M.P., Pye Nest.

DUCKS (Aylesbury).—First, J. Dixon, Horton Park, Bradford, Second, F. E. Rawson, Thorpe. **Ducklings.**—First, F. E. Rawson, Thorpe. Second, H. Edwards, M.P., Pye Nest.

DUCKS (Rouen).—First, F. E. Rawson, Thorpe. Second, J. Dixon, Horton Park, Bradford. **Ducklings.**—First, F. E. Rawson, Thorpe. Second, M. Ridgway, Dewsbury.

DUCKS (any other kind).—Prize, J. Dixon, Horton Park, Bradford.

DISH OF TWELVE EGGS.—First and Second, F. E. Rawson, Thorpe.

SPANISH COCK.—Prize, H. Richardson, jun., Sowerby Bridge.

GAME COCK.—Prize, Mrs. W. Smith, Kent House, Halifax.

PIGEONS.—*Carriers.*—First, Mrs. W. Smith, Kent House, Halifax. Second, J. Firth, Halifax. *Tumblers.*—First, J. Brook, Crown Street, Halifax. Second, Mrs. W. Smith, Kent House, Halifax. *Fantails.*—First, H. Child, jun., Birmingham. Second, Mrs. W. Smith, Kent House, Halifax. *Pouters.*—First, T. Grove, Leamington. Second, J. Firth, Halifax. *Dragons.*—First, Mrs. W. Smith, Kent House, Halifax. Second, H. Child, jun., Birmingham. *Runts.*—Prize, H. Child, jun., Birmingham.

RABBITS.—*Length of ear.*—Prize, H. Child, jun., Birmingham. *For weight.*—Prize, W. H. Baxendale, Bullace Trees.

—(*Halifax Guardian.*)

WORCESTER POULTRY SHOW.

We think it right to remind our readers that the day on which they receive this is nearly the last for making their entries for the Worcester Show. We take much interest in it, because it is a chicken show, and we have often expressed our admiration of them at this season of the year. The liberal prizes offered—ten cups of the full value of £10 each, nine of less value, besides money prizes—are an inducement to exhibitors, while the names of the Committee and the straightforward rules they have published are a guarantee that everything will be conducted in a way that contributes both to the stability and pleasure of these meetings.

OUR LETTER BOX.

TAIL OF THE SILVER-SPANGLED HAMBURGH COCK.—"I have to choose between two Silver-spangled Hamburg cockerels of the same hatch, and four months old. They are both beautifully spangled, equal in size and points, but being respectively of light and dark plumage. The tail of one is decidedly spangled, while the other is edged all round with the deepest green black, the middle remaining a little 'splashed.' I should certainly have chosen the last but for your remarks in p. 321, August 18, respecting 'clear tails,' and I trust you will kindly tell me which cockerel is most likely to gain a prize."—E. A. S.

[We heartily commend you for sending a sketch of the feathers which cause your difficulty. It explains more than sheets of writing. There is not the shadow of a doubt which is preferable. It is the light cockerel. His feather is nearly perfect. The other is very faulty, being clouded and laced. We judge, of course, from the feathers, as you say in other points they are equal. The tail of a Silver-spangled Hamburg should be white, with a black moon or tip at the end. This applies both to cocks and pullets or hens. It is easier of attainment in the latter than the former. It was always desirable, but not so frequently met with formerly as now. It is not, perhaps, so imperative as to neutralise every other point, but it is a great step towards success.]

LONDON MARKETS.—SEPTEMBER 14TH.

POULTRY.

There is little alteration to note. The supply of Grouse continues small; but there is an abundance of Partridges. Many of them appear to be late hatched.

Large fowls	5s. 0d. to 5s. 6d. each.	Grouse	.... 2s. 9d. to 3s. 6d. each.
Smaller do.	3s. 6d. to 4s. 0d. "	Pigeons	..... 7d. to 8d. "
Chickens..	2s. 0d. to 2s. 6d. "	Rabbits ..	1s. 4d. to 0s. 0d. "
Geese	6s. 0d. to 6s. 6d. "	Wild ditto ..	10d. to 1s. 1d. "
Ducks	2s. 6d. to 3s. 0d. "	Leverets....	3s. 0d. to 3s. 6d. "
Partridges		1s. to 1s. 9d.	

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—September 15, 1857.

WEEKLY CALENDAR.

D M	D W	SEPTEMBER 22—28, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
22	TU	Grass of Parnassus.	29.510—29.244	65—47	S.W.	18	48 a. 5	56 a. 5	6 56	4	7 21	265
23	W	Genista pilosa.	29.235—29.175	66—45	S.W.	04	49	55	7 17	5	7 42	266
24	TH	Silene pratensis.	29.231—29.070	66—42	S.W.	20	51	53	7 47	6	8 3	267
25	F	Bupleurum tenuissimum.	29.510—29.241	63—39	S.W.	05	53	51	8 30	7	8 23	268
26	S	Celery (Apium graveolens).	29.657—29.374	63—45	S.W.	27	54	48	9 27	8	8 44	269
27	SUN	16 SUNDAY AFTER TRINITY.	29.138—28.968	55—46	S.	01	56	46	10 37	9	9 4	270
28	M	Shepherd's Staff (Dipsacus).	29.002—28.722	64—46	S.	13	57	44	11 56	10	9 24	271

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 65.7°, and 44.6°, respectively. The greatest heat, 82°, occurred on the 25th, in 1832; and the lowest cold, 26°, on the 26th, in 1855. During the period 97 days were fine, and on 99 rain fell.

THE POTATO DISEASE AND ITS PREVENTION.

It is a melancholy truth that the murrain called the Potato disease prevails to a great extent this season. Many able and learned writers have tried to account for this mysterious visitation, some asserting that it is caused by electricity, others think that wet seasons have a great and evil effect upon this vegetable, and some think it is brought on by exhaustion or old age in any particular variety.

As every writer has his favourite theory on this matter I trust I shall be excused if I differ from so many conflicting opinions, and give my view of the subject.

I need scarcely refer to the fact that the tubers of Potatoes are not seed, though we hear growers continually using the term "seed Potatoes." To such as may not have given it a thought I may say that the Potato is a continuation of the original plant raised from true seed, which seed is produced from the stems of the plants, inclosed in a fleshy receptacle or berry. These, from their shape and ill taste, are often called *Potato Crabs*. When ripe the seed is perfect, and to those who have time, means, and inclination, I would say, gather these berries, crush them, and throw them into a vessel containing water, then stir them about till the pulp is separated from the seed, and pass it through a sieve with a mesh fine enough to retain the seed, which then should be spread upon some strong paper, and gradually dried in the sun. When that takes place collect the whole together, give it a gentle rubbing to remove any impurities, and wrap it in dry paper till the sowing season arrives.

To insure perfect success a slight hotbed should be put together about the middle of April, and, as soon as the heat is moderated, cover the bed with soil from four to five inches thick, make the surface smooth and fine, and then sow the seed, covering it slightly with fine-sifted, light soil. If you have a frame with a glass light it will be of great service, but if not stretch hoops over the bed, and cover the bed with mats or oiled canvass. The seedlings will quickly come up; then give very gentle waterings and plenty of air. Be careful to protect the young and tender plants from frost, heavy rains, and scorching sun.

Whilst this process is going on prepare a piece of ground in an open situation large enough to hold all the plants. Do not make it too rich with manure; in fact, if it is in good condition do not use any manure at all.

As soon as it is certain that frosts are over, and the plants are three or four inches high, transplant them into the prepared ground in rows eighteen inches apart, and nine inches from plant to plant in the rows. Keep the ground between the rows clear of weeds by frequent hoeings, and when the plants are nine inches high give them a slight earthing up. They will now require no further care excepting the deeply interesting one of

watching their growth, and any peculiarity of foliage or habit of growth denoting new features in any of the plants. Seedlings, I have observed, sooner form bulbs or tubers than older varieties, nature being, as it were, anxious to secure a progeny to continue the species. The cultivator will now require great judgment and discrimination in selecting such varieties as may appear to him worthy of further trial. I can only give hints to guide his judgment. Such as have deep, wide eyes are objectionable because of the waste in preparing for the table. Large strong stems are also undesirable, for the obvious reason that they take up too much room. The colour of the Potato when cooked is also a point worthy of consideration, for though such as have a yellow tinge are preferred by some, yet a white mealy Potato is most highly valued by nine-tenths of the consumers. Size is a point also to be duly looked to. Very large Potatoes are only useful to feed pigs or other animals with, and very small ones are neither profitable nor useful. Shape, in respect to their being round or kidney-shaped, is of little moment.

To sum up all the good points in a few words, they consist in—1. Short tops. 2. Shallow eyes. 3. White colour when cooked. 4. Light and mealy. 5. Medium even size. 6. Plenty of produce in small space.

Having obtained one or more varieties possessing all those good qualities the raiser will not only have gratified himself, but also conferred a benefit upon his fellow creatures.

At an Exhibition of cottagers' vegetables held at Eccles, near Manchester, on Saturday, the 12th ultimo, I noticed three seedlings of different varieties raised by a cottager named John Aldred. One he named *Sole*, because it was in shape something like a Fluke Potato, and the other two were not named. They all promise to be valuable varieties. It was the fact of seeing those beautiful varieties that set me thinking upon the matter, and considering whether it would not be possible to keep these, and other young healthy varieties hereafter to be raised, from becoming diseased.

I saw recently in a local paper that the disease was brought on in a certain locality by a thunder-storm. This is another theory of the cause of this disease just about as likely as any other assigned cause. My opinion twenty years ago was the same as it is now, namely, that the disease is caused in the first place by taking up the *seed Potatoes* long after they are ripe, or, in other words, fully matured for cooking. This ripe state having been attained by the ancestors of this generation of Potatoes, and being now continued, it naturally follows that the growing powers are weaker and weaker, until at last the disease takes the entire plant, the stems and leaves turn black, and nearly the whole crop is gone. It may be that a peculiar state of the atmosphere may materially assist the rapid decomposition of the crop after the disease has begun; but it is not the main or first cause. If that portion of the crop which is intended for seed had been secured before the dry or ripe, mealy state had taken place, they would have been saved

from disease and kept in great vigour for the ensuing season. Over ripeness, then, is the great moving cause of the disease. I have repeatedly proved this, and in confirmation I may mention that in the lower parts of Yorkshire, on the banks of the Humber, there is a large flat of land named Marshland. It is not, however, a marsh, but a deposit of alluvial soil that has been collecting for ages. On this land, some thirty years ago, the farmers cultivated a fine variety of Potato named the *Red-nosed Scotch Kidney*, and most excellent Potatoes they were, being "a ball of flour when well cooked." It is a proved fact that this variety would not grow more than two seasons. The growers were obliged to send all the way to the Highlands of Scotland for fresh seed. In that region the frost comes early, catching the Potatoes in full growth and greenness; consequently the tubers were in an unripened state, and when planted in the low, warm soil of Yorkshire produced most excellent, sound Potatoes. The cultivators, however, allowed them to ripen fully, and the usual consequences took place the year following, namely, small crops of unsound Potatoes. At this day, I believe, that excellent variety is quite extinct. New varieties have superseded it, not because they are better, but because they are younger, and bear for a while better the absurd treatment of excessive ripeness. If I am right in this doctrine of over ripeness the remedy is easy. Let the cultivator make up his mind how many he will require for planting next season, and take them up when fully grown whilst the tops are green.

Let us look at another fact. The *Early Ash-leaved Kidney* is, perhaps, the oldest variety now in existence. If this variety is allowed to remain in the ground long after it is ripe it is ten to one but one-half of the crop is diseased. The sound ones are kept for sale, or to plant at home the following season, and then the disease attacks them earlier. Again, they are spread out on a border or gravel walk to, as they term it, *green*, from which practice I could never see any benefit. It only has a tendency to cause them to sprout earlier, long before they can be planted. Those sprouts must be rubbed off, and thus the plants are weakened to the last degree.

I once tried the following experiment on this very variety:—I took them up whilst the tops were green and the skin would rub off easily. Knowing they were not ripe I placed them, directly after lifting up, behind a north wall, and covered them with soil a foot or more thick. They were examined occasionally through the winter, but no symptoms of premature sprouting appearing, they were left undisturbed till the March following. I had a south border about nine feet wide. On this border a quantity of half-decayed leaves were spread and dug in. The Potatoes were taken up, and planted on this border at three feet apart between the rows, and a foot from set to set. All small sets were given to the pigs, and none, though ever so large, were cut. They came up strong and healthy, and were in due course earthed up in the usual way. The consequence was a most extraordinary crop of larger than ordinary-sized Potatoes, and all as sound as possible, whilst many of our neighbours had theirs much diseased.

This disease is not so modern as some think. I have known it for upwards of twenty years, though never so prevalent as in the year of famine in Ireland. I well remember seeing a long heap of Potatoes in Cheshire many years before that in as badly a diseased state as any I have ever seen since.

The whole of my ideas as to remedying or preventing this disease may be summed up in a sentence or two. Let new varieties be raised from seed, and always keep a stock of half-ripened tubers to plant the following year. Old varieties, such as Ash-leaf Kidney, treat similarly. Let different persons in different parts of the

kingdom try my practice, and let the results be published in THE COTTAGE GARDENER.

Mr. Errington in Cheshire and Mr. Robson in Kent are as likely persons as any I know to carry out this experiment; but let me beg that my instructions be carried out to the letter, and I have no fear the result will be not satisfactory.

T. APPLEBY.

KEW GARDENS.

SINCE this time last year they have made a great improvement in the plan of the promenade garden along the great central walk up from the old conservatory to the lake. They have also improved the design for the terrace garden in front of the large Palm-house conservatory. This is the first step—the principal difficulty and the grand secret of flower gardening. To make a correct plan, according to the style of a flower garden would render flower gardening as simple as kitchen gardening is to most people. Every one seems to understand in a very short time how much of his kitchen garden should be devoted to this or that vegetable. A very small space for Potatoes, a large area for Onions, and a much larger piece of ground for Chives, Garlic, or Shallots, would soon teach the most ignorant that such cropping is not the best or most profitable; and he would thus see the necessity of learning the exact quantities of ground, the "beds" for each individual crop, according to "the wants of the family," as the prevailing *taste* or the *style* of flower gardening requires such and such disposition of beds and colours. A man who did not know kitchen gardening or the "wants of a family," although he might be a very good planner, could hardly miss making mistakes in a plan for cropping a kitchen garden; and the best planner among our gardening artists would be just as liable to make mistakes in the plan of a flower garden, unless he understood flowers and the style of planting them at the time.

The original plans for the terrace garden and the promenade garden at Kew showed at the first glance that the designer was not a flower gardener; but I must add that I learned that day for the first time that the promenade was not intended for a flower garden when it was planned, but for some sections of Conifers—a genteel arboretum and fruticetum on a new plan; and a most effective plan it was too, throwing allied families into distinct and distant groups on each side of the promenade, with two connecting lines running through on both sides from end to end—a splendid and quite a new idea in landscape gardening. They had most industriously tried to reconcile this plan to flower gardening on the promenade principle year after year, and every season showed more clearly than the last that the plan was irreconcilable to that style, or any recognised style, of flower gardening. At last they gave it up, altered the plan completely, and made a vast improvement.

The "distant and distinct" groups each consisted of three beds in the line of the walk—a circle, an oblong, and a circle again, as at the Crystal Palace, with an additional circle at the back of the centre of the oblong bed! What this last circle was meant for no one ever made out, or could make out; and no wonder, for the designer meant it, and all the rest in that row, to be one of the connecting lines of the *fruticetum*, in which a relative shrub, or low tree to the rest in the group, should be planted. His second connecting line runs in the direction of the centre of the beds. The "vast improvement" is this: the back row of flower-beds is now converted to its original purpose—no flowers there, but an upright or fastigate shrub in each circle, and the "distant" groups being connected into one whole by introducing similar groups between them.

The promenade here now is more complete as a design than that at the Crystal Palace, which is one-sided—I mean the bottom line in the *centre* of the upper terrace, which is the best example of the promenade style at the Crystal Palace. At the latter place they adopted the pincushion style by planting a standard in the centre of all the circles, while at Kew they have the original line of upright-growing shrubs, not, however, in the circular flower-beds, but on the grass between the beds. The Crystal Palace plan is by far the best, because the plant in the centre of the bed, be it standard or bush-like, is cultivated to the utmost, while a plant on the grass, with a small bare space round it, must comparatively be left to chance. If the soil is not suitable or “natural to it,” as we say, no plant, or bush, or tree will grow a quarter so fast or so well, during the first fifteen or twenty years of its age, if it is grassed or turfed up to the stem, or with only a small circle round the stem, as with a standard Rose. Hence the reason, no doubt, why Sir Joseph Paxton planted the great Deodars at the Crystal Palace in the pincushion style; that is, in the centres of large dug beds. He wants to see them fully grown before he dies, while some most excellent gardeners would have them turfed over at once for the look of the thing, and leave their full-blown beauty to the third or fourth generation; but the two ways are equally good on the principle of “good taste,” because the meaning of good taste, when analysed by critical rules, is this—the taste of the speaker.

Many of the new groups in the promenade at Kew have the centre oblong bed planted with standard Roses; but Roses do not do very well at Kew, the soil being too light for them. Unless a bed of standard Roses is well filled on the surface with gay Roses of the China or free Bourbons, as *Gloire de Rosamène*, *Mrs. Bosanquet*, *Fabvier*, and the like, they seldom look well when placed up close to the more common style of flower-beds. If the row of shrubs on each side of this walk—the rows which run in the direction of the centre of the flower-beds—was done away with, and the standard Roses were put in the same lines, not on the grass as the shrubs are, but *in the centres of all the circles*, as at the Crystal Palace and in the Experimental Garden, and even as at the farthest-off end of the avenue of flowers here on the north front of the Palm house, where the pincushion style was adopted last spring to hurry on the newly-planted Rose climbers, the grand promenade garden at Kew would be the most complete of the kind in England. But to render it perfect on principle there are four circles in the angles of two cross walks which would need to be altered to the only one shape for angle-beds in geometric gardening. These four unfortunate beds are filled with Hollyhocks—the worst plant we have for the centre beds of an elaborately planted promenade. If there is one question more decidedly settled than another in flower gardening it is that Hollyhocks and Humeas should not appear among flower-beds where their lower parts cannot be hid, and, as Hollyhocks are getting ill-fared at the bottom and seedy looking at the top by the beginning of September, they are unfit associates for “bedding plants.” They have hit upon the true way of “having Hollyhocks look fine” at the Crystal Palace this season, groups of them forming the centres of large circular Dahlia beds. They vastly improve the shape of “squat” or lumpy beds, and they are spared, in their decline and nakedness, from the vulgar gaze.

By the way, speaking of Humeas, the most graceful flowering plant on the face of the earth, a row of them on each side of this magnificent walk, just where Junipers, Thujas, and Taxads now form two of the old “connecting lines,” would be the ultimatum of profuse decoration in the truest style of art, provided the centre of all the circles on the same lines was planted with some

standard plant, but not very bulky in the head—an avenue, in fact, decorated in the highest style (the mixed) of promenade planting. The hit on the highest style of promenade planting at Kew from the very first was that their groups were always mixed, the one differing from the other. They tried hard at this style at the Crystal Palace, but from some cause or other they gave it up, and this year all their circles are yellow, and all their oblongs scarlet—very rich certainly, but too much of a good thing to invite to an evening walk. I have every kind of plant in this vast assemblage booked, and I shall name them all very soon, which is a different branch of the business of teaching the young idea how to shoot in this fashion.

We now go to the conservatory terrace, and, if you recollect, there used to be a green patch of grass in the centre of each of the two divisions. What they were for I could never divine, but they destroyed the whole effect of the planting year by year; therefore, whatsoever you do, recollect not to leave a flat patch of green in the centre of a geometric garden. Mr. Smith, the curator, told me that day that it was understood these two central patches were intended to set up two grand flower vases on! This would have been a greater error than the old method of placing a brilliant scarlet bed in the centre of a group, a method which was exploded in England at the time of the French revolution in 1848, and which is now well understood by all of us as lessening the effect of the group to one-half of its size. A fine flower vase in the centre would still more effectually arrest the eye, and fix it on the centre figure; therefore anything to the size of a sundial ought to be avoided in such centres. The two patches of grass have been converted into two flower-beds, and of the best kind which we know of for a centre, the *Flower of the Day* Geranium, and with the proper proportion (three to one) of the *Variegated Mint*. The four outer corners of each figure or end are planted with *Tom Thumbs*. The yellow, and blue, and purple are in the right proportions, and in the proper places for a picture, and altogether the garden is most beautiful. The only fault when I called at the end of August was that the yellow (*Calceolaria integrifolia*) was too strong for the blues and purples; but Mr. Craig, the flower gardener, explained how he meant to avoid this another year. He has a most difficult figure to manage well in this very faulty design; but, having studied it year after year, there are very few gardeners who could “do” it now more effectually than he has done.

Two-thirds of the upright Irish Yews, and the lumpy-headed Hollies in contrast with them on this terrace, must be swept away to get at the beauty of which the place and the present design are capable of affording. After that another faulty and prominent part of the design will become apparent, and should be altered, and no doubt will be; I mean a raised compartment on each side of the central walk which is now on grass, and intended for pedestals and flower vases, which would completely ruin the effect of what has been already very much improved thus. You walk down from a perfectly level terrace, on which the grand conservatory stands, by a flight of steps to a lower terrace, which ought also to be equally level from end to end, a third level being the surface of the lake immediately in front; but the view of landscape gardening destroys the union of levels—unity of expression, as Loudon would call it—and, instead of finding yourself on a level with the flower-beds, or rather, having a level view over them all, a raised platform of glass flanks you right and left. Place vases on these, and your eyes would need to be turned upside down in their sockets to discover the beauty beyond the pedestals; or, if the laws of perspective and optics do not bear out this assertion, all that I know of them has been in vain. But there are rules

by which all such things can be judged, which are as true as those by which the world and the rest of the planets move in space; and to discuss them, even in my small capacity, will assuredly help to infuse a more correct taste for flower gardening than all that I could write about bedding plants in a twelvemonth.

Kew is open to all free of expense. An hour there in an afternoon with this number of *THE COTTAGE GARDENER* will do you more good, even though the writer may be altogether wrong in his judgment, than two or three hours' sauntering about the garden and picking up the names of Verbenas and other bedding plants. The plants in every bed at Kew and at Hampton Court are properly named—a grand advantage. I recollect the time when the gardeners who worked there among the plants *were not allowed* to pick up the name of a single plant there. "It was the narrow-minded doctrine of Sir Joseph Banks" (Herbert) against the liberal-minded Sir Benjamin Hall and Sir William Hooker. "The evil consequences which flowed from the bad system pursued there, tending to loosen the ties of morality, and to create a feeling of satisfaction when it was known that cuttings had been stolen from the large plants hoarded there" (Herbert), are and have been long since remedied, and "the feeling of satisfaction" now is the readiness with which every improvement in gardening for the million is seized on by the authorities there, and is conducted by the heads of departments with as much zeal as if they were doing it "for their own selves."

Another grand new feature at Kew this season is a repetition of the promenade style of placing flower-beds along the leading walk from the north entrance of the Palm conservatory to the extremity of the American garden, and from hence to the gate of the pleasure ground, in a straight line—another system of pincushion beds. The plants in all these beds I have in black and white, and will "give them" shortly; meantime I shall conclude with a characteristic anecdote.

On going along the pincushion beds towards the pleasure grounds I asked Mr. Craig how he could have thus taken a leaf out of the Experimental Garden. "I never thought of it," said he; "but, wishing these climbing Roses to grow as fast as possible, I made larger circles for them than pleased us; but Sir William Hooker was so anxious to get up the climbers as soon as possible that I was obliged to have larger circles for them than might otherwise be desirable, and to take off the raw appearance 'we settled' to plant them with bedding plants, in continuation of the new beds through the American ground." And most beautiful these pincushion beds looked half a mile off—in scarlet and yellow chiefly. "Necessity is the mother of invention," according to the adage, but is far from the point. I know fifty cases of urgent necessity, and not the slightest idea of inventing a broom handle to sweep them out; but let *necessity* force itself on man's understanding or on woman's vocal prerogative, and depend upon it he or she will not be long in discovering the true invention. The necessity of a rapid growth presented itself to the practical heads of Sir Joseph Paxton in the case of the Deodars, and to Mr. Craig in that of *Félicités*, *Rugas*, and *Multifloras*; and thus they robbed me of the credit of the invention of pincushion beds for the grand improvement and ultimatum settling of standard Rose culture in the British isles. D. BEATON.

GOOSEBERRY CATERPILLARS.—I think I ought to inform you and your numerous readers that I again completely succeeded this year in keeping off these pests by my usual method of strewing soot plentifully into the soil under the trees in the spring. I had a most plentiful crop of fruit.—T. M. W.

GATHERINGS FROM NEIGHBOURS.

WREST PARK.

THIS splendid place, about seven miles from the Hitchin station on the Great Northern, has been several times noticed in these pages, and to those notices I would refer for some faint idea of the position and beauty of the mansion, garden, pleasure grounds, and park. My gatherings at present will be confined to a few little additional matters that have left their traces on my memory from a recent visit. Writing this on the 7th of September, I am well aware that the best judges in the gardening world will have decided upon some of my reminiscences before they are honoured with printers' ink. Whatever opinions, therefore, may here be advanced will be thoroughly unbiased by the views or decisions of others.

As previously stated, whoever visits Wrest should either enter or return by the beautiful entrance at Silsoe, in order to see the pointed Gothic arch, cathedral-like style in which the boughs and branches of the avenue of Elms meet and cross each other. I have been assured that no art has been used for securing this striking effect, though no doubt the width across from one Elm tree to another, and the somewhat small space between each row of Elms and another row of Spanish Chestnuts behind them, have contributed so far in causing the Elms to throw their boughs across the carriage way. I will now confine myself to the garden.

On entering at Mr. Snow's house I noticed a fine plant of the double scarlet or crimson Pomegranate blooming freely on the wall, and festooning the doorway. The climate of Wrest may thus far be judged. Notwithstanding this, however, a fine, much-prized plant of *Ceanothus azureus* had ceased to exist, though only a few yards distant. Whether either from some lingering hope that the plant was not quite gone, or the warmth of that affection that clings even to the faded remnants of what was once so prized and lovely, or from a more utilitarian resolve that, having ceased to be beautiful, it should nevertheless be forced to support and brace something else that was so, I really do not know, but certain it is that only here and there could you see pieces of the skeleton branches, so thoroughly were they twined and twisted over by the *Ipomæa carulea rubra*, just beginning to show its bloom buds. At the base of the wall where the *Ipomæa* had left an open space, and at the foot of the conservative wall in other places, were pretty blooming plants, from two and a half to nearly four feet in height, and wide in proportion, of the hardy annual *Hibiscus Africanus*; and I am not sure but there were also some of the *Hibiscus trionum*, better known in seed-lists as *Bladder Ketmia*. Few things could be more beautiful than the fine yellowish blossoms, with their striking dark centres expanded to the sun-beam. And how were such nice plants of an annual now seldom met with coaxed into such vigour and fertility? Seeds from early flowers are allowed to drop and vegetate. Some seedlings of these two or three inches in height are taken up and potted in October, kept from frost all the winter, and turned out at the foot of the wall in April and May. This is worth noting even by our window gardeners. How beautiful such plants would look on a warm balcony! Many common things pass unobserved and neglected, because we have never made the most of them, or knew not how to do it. Here and in other borders were growing nice patches of the *Datura ceratocaulon* just where they had been sown, very striking from their large, whitish, fragrant flowers, produced in continuous abundance.

PEACH TREES WEARING OUT.—As a consolation in some measure to those who fret themselves about the short time their trees remain in health and fertility, I noticed that but few of the first trees planted by Mr.

Snow against the walls were remaining, though they secured all the appliances of suitable soil and his well-known superior management. The young trees are looking beautiful, but nothing could have exceeded the robust health and fertility of the others for many years. With this exception, and that of some *Morello* Cherries that gave way somewhat strangely several years ago, I believe all other fruit trees planted or removed to this garden have maintained a state of healthy fertility.

EDGINGS TO WALKS.—I believe the whole of the walks in the kitchen garden are now edged with slate, which, in connection with a fine binding surfacing, gives them a very neat, finished appearance, and the slate affords no harbour for slugs or other vermin, and, if not wilfully broken, will require no attention for many years.

Most gardeners have tested SNOW'S WINTER BROCCOLI, and know the disappointment when a seedsman sends anything but the real Simon Pure. It is far better to say at once, as several establishments now do, that they either have not or cannot get the article ordered. The putting the desired name on a packet, whatever may be inside, just as it used to be anything but uncommon to send more than half a dozen kinds of Peas out of one bag, is a mode of business that will make short tricks for no business at all. Two Lettuces are equally worthy of attention. *Snow's Compact*, which stands the winter better than any white Lettuce I know, and hearts and is fit for use in the spring sooner than any other of any kind I have met with. This, however, be it observed, is its great valuable quality. With me it is one of the first to bolt in summer. *Snow's Matchless* is seemingly a fine, large, crisp white Cos that stands well in summer. I have not yet tried it. The best with me at present is the *Paris Cos*.

DWARF CHINA ASTER.—I believe this was first found from a sowing made by my neighbour, Mr. Busby. He and Mr. Snow have had it for some years, and, as the latter has large borders of it now, it may ere long find its way into general use. The flowers are double, medium-sized, lilac rose in colour, and produced in great profusion on plants seldom exceeding six inches in height; at least, they are very dwarf, and well fitted for the front row of a border.

IMPORTANCE OF FRONT LIGHT IN HOUSES.—In a low, rather flat-roofed house, appropriated to Peaches and Figs, the roof resting on a wall at back, and on another some three feet or more in height in front, Mr. Snow found there was not light enough to harden and mature the wood. The pitch of the roof has been left the same. The front wall has merely been lowered, and sashes swinging on pivots substituted in its place. The wood of the Peaches was in excellent order trained on a trellis. The Fig division had trees against the back wall, and the front was supplied with fine compact bushes in pots, beginning to ripen their second crop. The wood on them was particularly stubby and short jointed. That on the wall was rather more vigorous, but laid in thinnish, and, to secure a sufficiency of light, many of the leaves had been cut in two. One well-ripened shoot is better than several that are unripened, and which cannot get light enough from being so close together.

RAISING AND REPLANTING VINES.—What used to be the early house in the range has this year been made the latest. From the great size of the foliage, and the colouring of the berries not being exactly what Mr. Snow wished, he came to the conclusion that the roots had got down into some very rich material. The Vines are planted near the front wall inside the house, their stems being fully as thick as a man's wrist. The roots were taken up from the extreme of the border right up to the front wall, in the beginning of November were replanted about six inches from the surface, and re-

ceived nothing in the way of covering during the winter. There is a good crop in the house, though, no doubt, the extra luxuriance has been checked. Though these have succeeded so well it has not altered views previously expressed respecting performing such an operation at an earlier period.

NEW HAMBURGH MUSCAT.—Though Mr. Snow pointed out this Grape to me some years ago, and though there could be no question of the peculiar richness of its Muscat flavour, yet, from seeing it at too late a period, I had formed the idea for myself that the bunches were apt to be straggling, and not produced over freely. These preconceptions were so far dissipated the other week that I passed the Grape twice in going through the houses without recognising it as an old acquaintance. The bunches seemed to be produced pretty freely, and individually they were compact, well set, and well shouldered. Some of the specimens to be shown at the Pomological Society will, I understood, be taken from the above house, where the roots were lifted in November.* These were just barely ripe, but quite as ripe as some *Muscadines* and *Black Hamburgs* in their vicinity. The *Muscat of Alexandria* was just beginning to change its green colour. There were several nice bunches of this *Hamburgh Muscat* on a Vine trained to a column in the early Peach house, from which the fruit was all gone. Fruit from this house took the first prizes at London Exhibitions. We all know that to secure such good Peaches they must have a lower temperature and more air than would suit the common *Muscat*. I leave these facts to speak as to the comparative earliness and hardness of this high-flavoured Grape.

IMPROVING GRAPES BY GRAFTING AND INARCHING.—Mr. Snow has been making experiments in this direction for years. One year he has been cheered with the hopes of a decided improvement; but a following year has left matters much as they were. The reciprocal influence of stock and scion is a matter demanding greater investigation. Several singular things with Vines have happened in my own practice. I will mention one. I grafted a *Muscadine* with the *Muscat*, which succeeded admirably. Two years afterwards a strong shoot broke from the stock about two feet below the scion, and, having an opening in the house, I allowed it to grow, resolving to have some *Muscadines* for a year or two again. To my surprise this rod produced leaves very like *Muscats*, and the following year gave me a crop the same as that produced from the scion grafted on four years before. I will allude to Mr. Snow's experiments no farther than as intended to affect *Muscats*. Every gardener knows what a fine fruit the *Cannon Hall Muscat* is when it sets well. I have seen it very fine at Wrest, and seen it also with berries as scattered as even envy could wish. By grafting it on the *Muscat of Alexandria* Mr. Snow hoped to improve it by inducing it to set more freely. His hopes last year were fully realised; but this year it has been found the improvement has not been permanent. Again, the *Muscat* has been inarched on the *Cannon Hall* to get greater size of bunch and berry in unison with its free-setting property. Present appearances would denote that Mr. Snow has succeeded, but time must tell. The berries on that Vine are certainly larger than usual, and the bunches of a large size—one of them I should say fully 3½ lbs. in weight. My present impression is that Mr. Snow has here gained a point; but, on the other hand, it must not be concealed that the Vine is strong and luxuriant, and the number of bunches limited for its strength—the great secret, along with ample thinning, for securing fine berries. Many who will have seen these *Muscats* before this appears will be better

* They gained the highest prize at the Pomological Society on the 12th inst.—ED. C. G.

able to decide for themselves as to the effects of Mr. Snow's experiments. I hope these advantages will be permanent; but, even if they are not, he deserves our thanks for making the attempt.

TREATMENT OF AMARYLLIDS. — Of stove plants and greenhouse plants I say nothing at present. In one of the houses were two large bulbs of *Brunsvigia Josephina*, (I think, but am not sure), the treatment of which furnishes a key-note to the management of the whole group. One of them had thrown up a magnificent flower-stem, the florets just beginning to peep from its top. From the time the stem appeared the plant had been watered. By its side stood the companion bulb, making as yet no sign, and the loamy soil in the pot was as dry and nearly as compact as a brick. Not a drop of water would be given until growth appeared. All the moisture the roots could get must be absorbed from the stone or tile on which the pot stood. This place is particularly rich in Amaryllids, most of them hybrids of Mr. Snow's raising, generally partaking of the *Hippeastrum* character, and producing their leaves before or simultaneously with the flower-stem. A pit was filled with these, the pots plunged, slightly shaded from very bright sun, and watered *only* until the leaves began to give signs of ripening. I have no doubt that others finished growing would be found standing quite dry in some suitable position.

UNITY AND FITNESS IN FLOWER GARDENS. — These, owing to the fine weather and the care and taste in planting, exceeded even their usual beauty. The one to the west of the conservatory was chiefly radiant with scarlet Geraniums, yellow Calceolarias, and Verbenas; but the most striking of all was a bed of the *Erythrina crista-galli*, which I referred to in a previous notice, even more splendid than usual, but just rather too high for its neighbours. The reason for the heading of this paragraph is the following: — The clumps of this garden, it will be recollected, are edged with stone and separated by gravel paths. As far as I recollect it may be said to have four centres, the groups of clumps radiating from four groups of statuary, with a handsome pedestal for each. The four centres are formed by joining the ends of the clumps next the pedestal, thus forming a circle, and planting it close to the pedestal, and thus wholly concealing its base. In a mere floral effect point of view perhaps no plan could be better; in a fitness and economical point of view I consider it superior to the ring beds at the Crystal Palace. Looked at as combining *fitness* with the artistic, I expressed my surprise to Mr. Snow that such centres of flowers were formed round the pedestals, and he at once told me that, though such a matter was never noticed, it was no less the fact that when his lordship gave the plan of the garden *an open circle of gravel was round each pedestal*, but that the ladies would have the intervening spaces between the ends of the beds filled up with the stone edging, and the inclosed space made a circle of earth for plants. Whatever may be thought of some ideas lately advanced upon this subject, it was somewhat pleasing to find that similar ideas had been held by the noble President of the Society of Arts. As a general rule, however near each other, flower-beds and statuary ought to be distinct and separate.

The scroll flower gardens in front of the terrace were in their usual state of high keeping and brilliancy. I mention them merely for stating that the standard Laurels by the side of the main walk are growing most vigorously, and that to produce a more artistic effect, and give them a greater resemblance to Orange trees, portable boxes are put round them on particular occasions; and, being covered openly on the top with boards, and strewed thinly with moss, no injury is done to the fine stems by keeping them from the air. Opinions may well vary as to this boxing; but the effect no doubt will be to make the specimens more artistic.

I found the large Orange trees wintered in the new Orange house, now standing under the partial shade of trees, growing vigorously, and well supplied with flowers and fruit in various stages. The house is already too small for the plants, and it is proposed to enlarge it by widening it, when no doubt Mr. Snow will endeavour to gain more sunlight through its roof.

UNIQUE AMERICAN GROUND. — This is placed as a huge square to the south of the orangery, and between it and the pavilion temple, in a very open position. I have waited for the exact size of this ground, but as it is not yet come Mr. Snow must correct any inaccuracies. The space is divided into four large squares, with suitable divisions of turf between them. Each of these squares is surrounded by a double fence of Yew, separated by a grass path six feet wide. The inner fence of Yew will be allowed to grow about three feet in height, the outer fence about two feet and a half. There are openings left in the centre of each side of these squares, and consequently opposite each other. In the centre of each square is a circle fifty feet in diameter, and considerably elevated in the centre, where an upright Juniper is planted, leaving abundance of lawn. Four small circles are also placed in the corners for lower-growing plants, and there also a position will be found for specimens of elegant low-growing Cypresses, &c., so as to carry the eye in a slanting line from the Yew to the plants in the centre of the large circle. Besides good heath and peat soil found on the demesne, hundreds of loads of rotten tree leaves here found a last resting place. The plants looked extremely well, but those on the north and east side of the circles were most luxuriant. Much of their flourishing condition in such a dry, hot summer was no doubt greatly owing to a deep mulching of half-decayed tree leaves. Every year this singular unique American garden will become more interesting. To connect it in some measure with the orangery and the pavilion a huge, gigantic group of statuary is spoken of for being placed in the centre of the four squares.

Passing many other matters, I must conclude with stating that the *Aralia Japonica*, the subject of a former notice, is still more flourishing in its sheltered corner, and that on the same border the *Cupressus thurifera* and *torulosa* and other things are equally luxuriant.

R. FISH.

PRUNING GRAPE VINES.

THOSE who have been behind the curtains must necessarily know a good many things which the rest of the world could hardly believe, and would not tell of any one of such things without making a sufficient apology by way of taking off the edge or sharp angles of the story. Of those authors who have treated on the Grape Vine in our days it is not difficult to perceive, from their writings, that some of them were behind the curtains and saw nothing "very particular," that others saw what needed to be softened down before it could be told of, and that some of them had never a glimpse behind a curtain or beyond a scene. Of the three classes I belong to the second. I was behind the curtains very often, saw many things done there which should have been done nowhere, often made apologies for them, or wrote in such a way about them as took off the sharp edges from the public eye.

One of these was this: — The true theory of pruning Grape Vines is believed in by every one; but I could plainly see that the true theory was either not true, or else they, the practitioners and the authors, with the rest in the place, did not square their practice with the truth, and to make up for the difference the said authors wrote the truth, but not all the truth, myself among the rest.

As early as the spring of 1852 I began an experiment to prove the difference between practice and theory in the pruning of the Grape Vine, which experiment will only be finished this autumn. My Vine is in the open air against a south wall. I allowed it to bear a few bunches only last year for the first time, and, at the end of the growing season last October, I considered the plant as well established, and fit for my experiment on pruning the Vine. There were three principal young shoots and some smaller ones. I pruned them all with a view to the experiment; but, to make my question more simple, I shall only mention one of the strong shoots. I pruned this one down to five good promising buds. One of these buds, *but not the top bud*, was intended to make a long shoot this season, and the other four buds each to produce one bunch of Grapes, and to be cut or stopped at different lengths before the bunches. The top bud, which was and ought to be the strongest, I stopped at the third eye before the bunch. No. 2 was stopped two eyes before the bunch. No. 3 was stopped at ten eyes before the bunch, and No. 4 at fifty-two eyes before the bunch; but I have the different lengths from ten to fifty-two cut in other instances, but they are not necessary for my question, which is this:—Supposing the four buds to have been nearly of equal strength at starting, and there was not much visible difference between them, which of them ought to carry the heaviest bunch, the best coloured, and the soonest ripe? and which bunch ought to have the best flavoured berries? The flavour will be decided at the next fruit meeting of the Horticultural Society in London. I shall take the "spurs," with three of the bunches attached, to the Meeting; but the fifty-two joints one, No. 4, I shall not cut, because I want it next year. I want answers from Messrs. Errington, Fish, Robson, as coadjutors, and from Messrs. Fleming, Hill (Keele Hall), Ayres, Snow, two Frosts, Sanders (Tetworth), Tiley, Scott (Leigh Park), Judd, Eyles (Crystal Palace), W. Forsyth, Barnes (Bicton), Busby (Stockwood Park), and all those who wrote books or papers on the Vine in this country Mr. Spencer, since 1830. I have one answer already from of Bowood.

All I want is the name and address of the writer, saying No. 1 or No. so and so should be the best, nothing more. I shall not give the opinion of any one to the world or to a single individual without his consent. All I shall say after the Meeting of the Horticultural Society is that so many were for No. 1, and so many for each of the others, as the case may be. If any one wishes his reasons for his choice and his name to be published I shall oblige him that way with the greatest good will.

D. BEATON.

FERNS.*

FERNS most deservedly have become great favourites with all who love gardening. Theirs is an elegance of form, a brightness of verdure, and a peculiarity of structure, not to be met with in any other family of plants, and, like their allies the Lycopods, they harmonise and can be grouped with all flowering plants. Indeed, we have seen groups of flowering plants embosomed by Ferns and Lycopodiums that no other artistic arrangement could excel.

All who wish for accurate descriptions and faithful directories to where all particulars may be obtained relative to Ferns

* *Cultivated Ferns*; or, a Catalogue of Exotic and Indigenous Ferns cultivated in British Gardens, with Characters of the Genera, principal Synonymes, &c. By John Smith, A.L.S., Curator of the Royal Botanic Gardens at Kew, &c. London: Pamplin.

Index Filicum: a Synopsis with Characters of the Genera, and an enumeration of the Species of Ferns, with Synonymes, References, &c. By T. Moore, F.L.S., Curator of the Chelsea Botanic Gardens.

Priced Catalogue (and Supplement), with brief Descriptive and Cultural Remarks, of the Stove, Greenhouse, and Hardy Exotic and British Ferns grown for sale by R. Sim, Nurseryman, Foot's Cray, Kent.

will do well to purchase both Mr. Smith's and Mr. Moore's work; and those who would know where and at what price they can purchase any Fern they need, with descriptions of each species and a few notes on their general culture, must procure Mr. Sim's Catalogue. The following extract will be useful to many of our readers, and is a specimen of what Mr. Sim can teach them:—

"Glass-covered Fern cases are too frequently kept as close as though the plants were undergoing a long sea voyage, and required the total exclusion of the external air. This is the chief cause of the Ferns in so many of these very interesting structures having a drawn and untidy appearance, and the glass soiled and obscured by the condensed moisture. Perhaps the following hints may be useful:—

"*Case* for the soil should have a perforated bottom, and be made to fit into, *but not to touch*, the bottom of a water-tight outer one, having an appliance for removing the drainage water occasionally.

"*Soil*.—The same as for large pot Ferns, to be raised considerably above the rim of the case, and to rest on at least an inch of large cinders or other pieces of porous drainage material.

"*Air*.—Admit occasionally, but not on very dry, sunny days, as it is then desirable to retain the *internal moist* air. Small glasses may be slightly tilted on one side: large ones must have special ventilators.

"*Water*.—As air is given occasionally, and the case has a perforated bottom, there will be a moderate escape of moisture from the soil, and that will have to be replaced at distant intervals, and then only when the surface gives slight indications of dryness.

"*Planting*.—Nothing is eventually gained by crowding the plants and leaving no room for future growth.

"Occasionally wash and well dry the glass, replacing it quickly."

THE COMMON RABBIT.

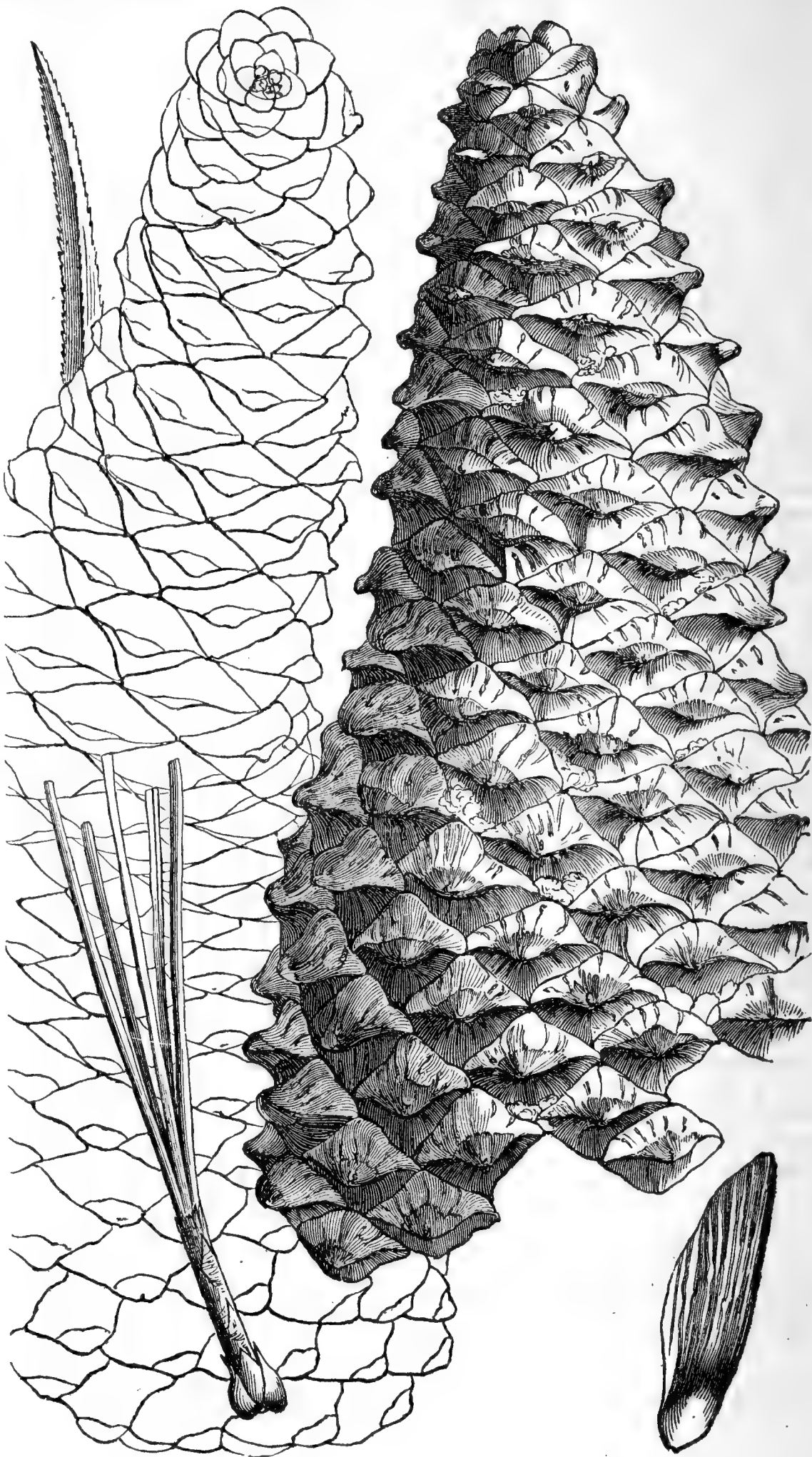
THIS species (*Lepus cuniculus*) is widely spread throughout the globe. It is not an aboriginal of this country, but the date of its introduction is uncertain. It is generally believed that the Rabbit was first introduced into Spain from Africa by the Romans, whence it gradually spread, naturalising itself in temperate climates. It is generally found either grey or black in colour, but albinos are also occasionally met with, most probably the result of a cross between this and the domestic Rabbit. As fanciers we have little to do with the wild Rabbit, except acknowledging it as the original source from whence our various domestic varieties have proceeded, influenced, of course, by the effects of domestication, cultivation, and climate. The common domestic Rabbit is of all colours, self as well as party-coloured, and exceeds in bulk its wild progenitors, some specimens coming under this class, but doubtless crossed with one or other of the lop-eared varieties, attaining very considerable size. The ears are carried erect as in the wild Rabbit, and as in the diagram; and in the party-coloured specimens the two colours may be arranged as in other fancy Rabbits, with the saddle, smut, &c., or irregularly, giving the animal a piebald appearance. These Rabbits are hardy, good breeders, and, being very plentiful, may be purchased for a mere trifle. They are the best possible stock for a young beginner, who requires experience before keeping a valuable stud of costly animals; and, as they are easily fattened and excellent for table purposes, there is no trouble in disposing of surplus stock. Many breeders of the fancy Rabbit are in the habit of keeping does of the common breed as nurses for the young of their more valuable specimens, for generally speaking they are found to be tender mothers and good milkers. Under this head I will allude to the "Silver Sprig," so called from its peculiar colour. It is only a variety of the common Rabbit, whose ground colour is black, studded over with white hairs, which give it the silvery appearance its name indicates. These Rabbits are very pretty, but do not, I think, deserve a place as a distinct variety of the Rabbit tribe.—PERCY BOULTON.

PINUS WINCESTERIANA.

SEEDS of this very distinct Pine were first received by the Society from the Marquis of Winchester, along with a part of one of its long cones, in June, 1846. More recently complete specimens, with perfect cones, were obtained from Mr. Hartweg, who found it growing on the most elevated parts of the Cerro de San Juan, or Saddle Mountain, near Tepic, in Mexico, attaining a height of from sixty to eighty feet.

Leaves in fives, from twelve to fourteen inches in length (on the wild specimens), rather stout, triquetrous, thickly set on the branches; glaucous green, and much resembling those of *Pinus filifolia*, but broader and shorter than in that species; sheaths persistent, about one inch in length, smooth and entire, or nearly so; seed-leaves on the young plants mostly eight in number, and rather short; branches few, spreading, irregular, and rather stout; buds imbricated, non-resinous, and large; cones pendulous; sessile on very short footstalks, two or three together, but sometimes single, always much incurved, and tapering pretty regularly from the base to the point, from eight to ten inches in length, and three inches and a half broad at the base, with from twenty-six to thirty rows of scales; scales five-eighths of an inch broad, much elevated, particularly those upon the middle of the cone on the upper side, where they become conical, and from three-eighths to a quarter of an inch high, while those on the under side and towards the extremities are much smaller, less elevated, and nearly all of a size; from amongst these exude large quantities of clear resin, particularly on the upper side near the base; seeds rather small, a quarter of an inch in length and angular, with rather broad wings one inch in length.

This Pine, so very distinct from any other hitherto described, particularly in its long incurved resinous cones, I have ventured to name after the Marquis of Winchester, who first presented the seeds of this noble Pine to the Society, and to whom its first introduction into England is due.—(*Horticultural Society's Journal*.)



ADDITIONAL OBSERVATIONS ON THE WHITE RUST OF CABBAGES.

By the Rev. M. J. BERKELEY, M.A., F.L.S.

AN account was given in our seventeenth volume, page 308, of the white rust with which Cabbages and other plants belonging to the same natural order are so frequently infested. It was stated that the species of fungus there described and figured is not the only one to the presence of which the white leprous patches are due, which disfigure the leaves and other organs, and often seriously injure the plant. At the present time, in the district at least in which these observations are written, a large portion of the Cabbages, which are in a very unhealthy state from the extreme mildness of the winter, are to a great extent frosted with *Botrytis parasitica*, which is fast destroying the leaves which it has attacked. There is, however, a third production, of much

more rare occurrence, to which the white rust is sometimes due, on which I am here about to offer some remarks. It is now nearly thirty years since Dr. Greville figured, under the name of *Cylindrosporium concentricum*, a little white fungus sprinkled in patches over the upper and under surface of Cabbage leaves with somewhat of a concentric arrangement. It was evidently abundant at the time in the neighbourhood of Edinburgh, as it was observed by several botanists, but till its recent occurrence in Northamptonshire no one seems to have gathered it since its first discovery in Scotland. Specimens communicated to Sir W. J. Hooker were examined at the time of the publication of the volume of *Fungi of the English Flora*, in 1836; but either they were in a very bad

condition, or so mixed with *Cystopus candidus*, that no correct conclusion could be formed as to the true affinities of the plant. Unger meanwhile had supposed that the white spots so common on the leaves of the common Celandine, Ground Ivy, and other plants, consisting of short moniliform erect threads, were the production figured by Greville, though without the slightest authority for such a supposition, and totally at variance with the whole account and figure given by the great Scottish cryptogamist. Matters were in this condition when the original specimen was kindly lent by Dr. Greville to the author of the present memoir; and though almost entirely destroyed, a morsel of the plant was in a sufficiently good condition to show that it had no near affinity with *Uredo*, that it had still less with the parasitic moulds, that at any rate it was produced beneath the surface of the leaf, and that the spores oozed out by reason of the contraction of the substance of the leaf upon the pulpy mass stored up beneath the cuticle. There was, indeed, some difficulty about the genus, but little as to its true affinities. In the spring of 1850 a single plant of Cauliflower attracted my attention from its leprous aspect, which seemed somewhat different from that exhibited by other plants attacked by the common white rust (*Cystopus candidus*). On examination it was, to my great delight, clear that I had at last discovered the doubtful plant of Greville. The summer proved most unpropitious to the growth of Cauliflowers, few coming to perfection till late in the year, whatever the variety might be. Mine consisted of those distributed by the Horticultural Society, with the addition of the *Walcheren*, and neither my own garden nor those of my neighbours, who had merely the old variety commonly grown, exhibited a really good specimen; and the complaint probably might have been made very generally, as an inspection of the specimens exposed for sale in Covent Garden during the summer, on more than one occasion, showed that at least for part of the season they were neither plentiful nor well formed. At any rate the crop was most miserable here, and at the end of June and the beginning of July, in a large garden where multitudes are grown for the supply of the neighbouring markets, almost every plant, amongst which there was scarcely one which had not run, was white with the same interesting fungus which I had observed earlier in the year at home.

How far the condition of the crop might be due to any peculiarity of the season, or to the presence of the fungus, whose growth was favoured by the state of the atmosphere, it is impossible to say, though both in the case of the *Cystopus* and the fungus under consideration, I have observed a tendency in the plants infested to produce a multitude of

green bracts amongst the flowers, greatly impairing the beauty, and consequently the market value, of the produce, even where tolerable heads are formed.

The parasite forms, both upon the upper and under surface of the leaf, roundish often confluent patches, varying greatly in size, consisting of little white specks disposed more or less concentrically, those of the centre frequently becoming yellow, and at length fading away, in consequence of the partial decomposition of the leaf which they have affected, while the outer pustules spread from the circumference to the part yet remaining healthy. Occasionally they extend to the midrib, which is then rapidly destroyed. On close examination it is found that the fungus, each speck forming a distinct individual, is produced between the true cuticle and the cuticular cells. To ascertain this point requires rather delicate manipulation, but the fact is very clear in an extremely thin slice, provided the flaccid membrane has not unfortunately been turned aside by the edge of the lancet with which the section is made. The cuticular cells, however, are much confused and deranged by the growth of the parasite, which is developed principally at their expense, those of the succeeding layer being very little if at all affected. The mycelium is closely incorporated with the cuticular cells, and appears simply grumous, without distinct structure: this, however, may be owing to its being so delicate as to be broken up under the knife; at any rate it does not appear to be filamentous. From the top of this mass, on the level of the tips of the cells, on which it grows, arise very short delicate sporophores, each of which is surmounted by an oblong, cylindric, often curved spore, three to five times as long as broad, and containing at maturity from two to three globose nuclei. It is highly probable that each sporophore produces in succession several spores, which are thus pushed forward, and in time fill the space between the true cuticle and the cuticular cells, thrusting the former out until it bursts. Partly owing to the successive development of the spores, which are mixed with a viscid fluid, and partly to the contraction of the leaf itself upon the pulpy mass, in dry weather or when exposed to the direct rays of the sun, the spores ooze out, kept in connection with each other by means of their attendant mucilage, and drying as they are exposed to the air, form rude irregular short tendrils. These tendrils are in their turn softened again by moisture, and after a time fall down, forming a little pellicle upon the leaf, the edges of which are often curved up like a little boat or canoe, as observed originally by Dr. Greville. There is not the slightest trace of a perithecium, so that we have here one of the lowest possible forms of the group to which it belongs. The spores, it should be observed, are not truly truncate, as they appeared to Greville when examined by the old imperfect compound microscope, but rounded and obtuse. They do not arise from the division of a thread in the direction of the septa, in which case they might indeed be truly truncate, but from the development and expansion of a distinct cell produced at the tips of the sporophores.

The question now arises, To what genus is the production to be assigned? Dr. Greville was undoubtedly correct in forming a new genus for its reception, for it could not be referred to any established at the time in which he wrote. As said above, the genus was misunderstood by succeeding observers, and the name applied to very different objects. A species on Ivy, clearly congeneric, was published by De Notaris, in his *Micromycetes*, under the name of *Myxosporium paradoxum*, the specific term being intended to denote the complete absence of perithecium. De Notaris appears, however, to have forgotten that Link had already proposed a genus *Myxosporium*, which is, in fact, synonymous with *Nemaspora*, *N. crocea* being taken as its type to the exclusion of the similar *Libertella*. A third species

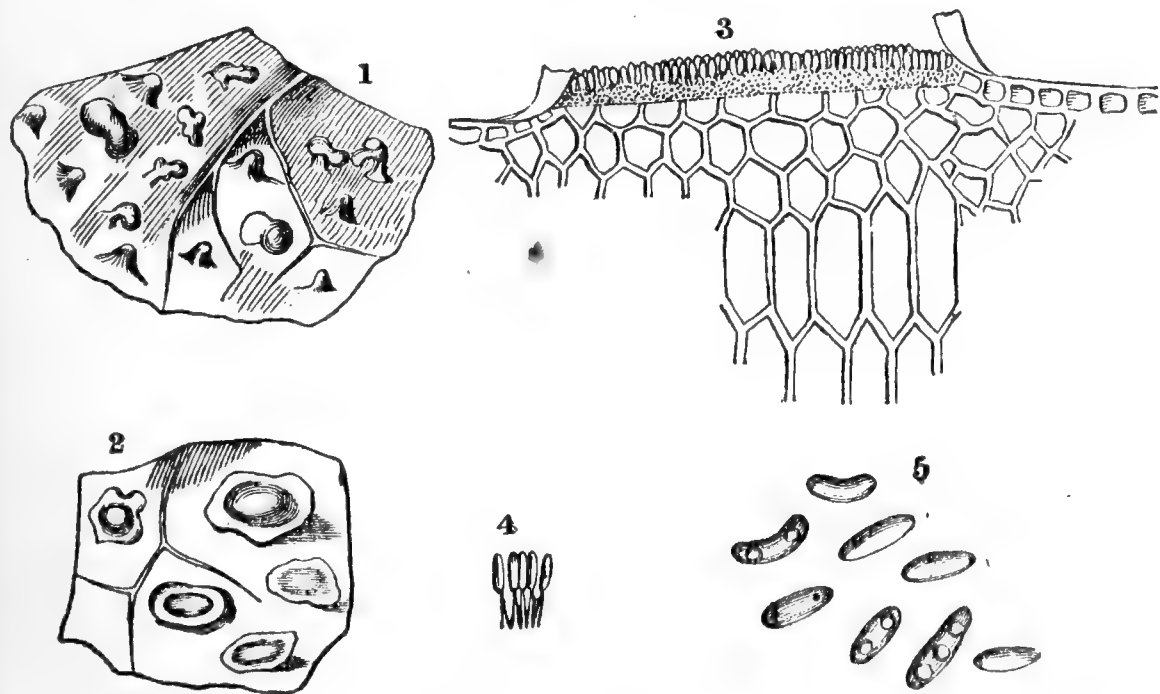


Fig. 1.—Portion of a patch of *Glæosporium concentricum*, just after the spores have oozed out, magnified.

Fig. 2.—Ditto where the irregular cirrhi have subsided from moisture, magnified.

Fig. 3.—Section of a leaf, from a firm part destitute of lacunæ, showing the fungus occupying the space which ought to be occupied by the subcuticular cells, highly magnified.

Fig. 4.—Spores and sporophores, highly magnified.

Fig. 5.—Spores, still more highly magnified, from a sketch by Mr. Broome.

was published by myself in the Fourth Fasciculus of British Fungi, under the name of *Asteroma labes*, *Asteroma* being used with the same latitude in which it had been taken by Fries in his *Elenchus*. There is no question, however, that it cannot be congeneric with true species of *Asteroma*, which undoubtedly possess a real perithecium. Subsequently one or two more species were received by Dr. Montagne from various quarters, who saw at once that they were congeneric with De Notaris' species on Ivy; but in the absence of specimens, and with the obscurity thrown on Dr. Greville's genus by Unger, he could not be aware of their generic identity with the plant of Greville. For these productions he has proposed the name of *Glaosporium*, and it is but proper courtesy to one who has done so much for these minute and obscure species to adopt his name, unless he should think fit to restore that of Greville, as to the identity of which there is now no doubt in the presence of abundant opportunities of examining the true structure of his plant. The total absence of perithecium is undoubtedly a most important circumstance, though we must not insist too nicely on the greater or less fusion of the perithecium in some of the lower species of *Phoma*, *Sphaeropsis*, &c., with the surrounding tissues, as multiplied examinations of the same species under different circumstances show a great difference in this respect, and throw, perhaps, some doubt upon the stability of Desmazières' genus *Phlyctæne*. Indeed, in the genus *Discella*, where the lower portion of the perithecium is often quite confused with the cellular tissue and the stratum from which the sporophores are derived, the upper portion of the perithecium, even in the same species, varies greatly in its degree of development, being sometimes distinctly present, sometimes confused with the cuticle. Another nearly allied genus, if we are not mistaken, is entirely destitute of a perithecium, but unfortunately the fungus which exhibits this character, from the admixture of *Sphaeria maculæformis* in the plate of Greville (*Septoria Ulmi*), has been assumed as the type of a genus which clearly possesses a perithecium, and the species now assigned to it are so numerous as to make any retrograde step extremely inconvenient. The better plan will be to raise *Septoria Ulmi* to generic importance: the name *Septorella* is sufficiently distinct, and the genus will be characterised by possessing the characters of *Glaosporium* with the addition of the existence of true septa in the spores.

A fresh examination of specimens in my own herbarium and in the published specimens of Kunze, Schmidt, Mougeot, Desmazières, Libert, and Rabenhorst, has quite convinced me that there is no perithecium. In Madame Libert's specimens, *Sphaeria maculæformis*, though in an immature condition, as might be expected from its being on leaves which are still green, is intimately mixed up with the *Septorella*. Even in this case, however, the solid contents of the black immature sphaerules sufficiently indicate that they have nothing to do with the other fungus, and where both occur isolated from each other there is no difficulty about the matter. Sometimes the spores of the *Septorella* ooze out at once from the ruptured cuticle without anything that might deceive; but occasionally the cellular tissue becomes a little tawny where it is raised up by the subjacent spores, which induced Madame Libert to assign a tawny perithecium to the fungus, a very different thing indeed from the black perithecia figured by Greville. When, however, this discoloured tissue is removed, there is nothing like the regular cellular structure, which always exists in true perithecia. This fact was pointed out under *Cytispora fugax*, in the "English Flora," in 1836, as completely established by Desmazières under No. 534 of his *Plantes Cryptogames du Nord*, though it seems to have escaped the notice of later writers, and indeed he has himself published since a host of species possessing beyond all doubt a true perithecium.—(*Horticultural Society's Journal*.)

TULIP BEDS FOR EARLY BLOOMING.

As the time is drawing nigh when the dwarf single early Tulips and the double varieties of the same will be planted out in beds and borders to come in for spring flowers next year, bear in mind, or rather, remember

my report of the Horticultural Society's last April Meeting, and see which are said to be the best and earliest of them, and also see my report of the Pine Apple Nursery, where I saw them in bloom. All that I recollect is that *Vermilion Brilliant* is the best Tulip that ever yet appeared for the flower garden; that double dwarf Tulips make fine, showy, rich beds; but that all shades of purple, that is, self or one-coloured flowers in any shade of purple, make a dowdy bed (anything which is *very dull* in England is only *dowdy* in Scotland); and that all white Tulips of the early class are more or less of a sickly hue, which gives a bad impression on a dull, cold, pinching day in spring, while all shades of orange and yellow are cheerful. All mixtures of crimson or scarlet with white, or with white and orange in the same flower, make rich beds, gay beds, and cheerful beds; and all bright scarlets, to crimson or to *Vermilion Brilliant*, make striking beds, brilliant beds, and beds "all in a blaze;" therefore, for those who do not happen to know the exact tints of the different kinds of early Tulips for bedding, instead of bothering their brains picking the names and the cheap kinds out of the trade lists, the best plan would be to send word to the shop which kind or kinds of Tulip beds they should like to have, according to the colours given in THE COTTAGE GARDENER of this date, and ask how much it would cost to plant such and such sized beds, the whole responsibility of the colours being on the dealer in Tulips, "provided always and be it enacted" that no such beds shall be covered as they have covered the beds of native Tulips in Yorkshire. My correspondent says, "I have been to the habitat of *Tulipa sylvestris* on the banks of the Don, and to my mortification found that the Yorkshire Railway Company have covered some acres of the field with the *débris* of their spare soil to the depth of twenty feet, and this Tulip, I fear, is lost to Yorkshire; but I know where it grows plentifully in the county of Durham."—T. S.

D. BEATON.

THE ELM.

THE Elm sooner passes into a state of decay after reaching maturity than the Oak, Scotch Fir, Yew, and others of our indigenous trees. On the other hand it is much more rapid in growth than these when planted on a soil suitable for it, and it is also adapted for some purposes which other timbers are not. The framework of coffer dams, and, in fact, all things under ground or under water, are said to be more durable and economical if made of Elm than of any other wood.

As an ornamental tree the Elm does not stand high, for its foliage is not remarkable; yet, when in the "sere and yellow" leaf, it is second to none at a certain time, the dark-coloured limbs and boughs contrasting strongly with the lemon colour of the falling leaf, and the shape of the tree is good.

There are several varieties of Elm, but the two most distinct, and those which the timber dealer pays most attention to, are the *Wyeh* or *Sand Elm*, as it is often called, and the *Dutch*. The latter has several synonymes as well.

The difference between these two is apparent to every one, the *Dutch* having a thick crusted bark of a dark colour, the bole usually straight for twenty or thirty feet or more, and then breaking off suddenly into a head, the limbs below that height generally projecting outwards at right angles to the trunk, the trunk being more red than the other, and usually sound. The *Wyeh* or *Winch Elm* has a more stringy bark of a paler colour, the tree seldom so straight, but often higher; and though sound trees are tougher and stronger than those of the other species, they are more often shaken or un-

sound, and altogether different in many particulars, being slower in growth, and consequently longer lived. Other varieties resemble these two in some way or other, and are regarded by the timber dealer as the same.

The Elm delights in a rather dry soil, often attaining a larger size than any other tree in a sound state. This county (Kent) seems well adapted to their growth, as it is not uncommon to find trees of large size that were planted in the memory of persons still living. They also grow pretty well on a strong loamy soil, and seem to endure the smoke of a town as well as any other tree. Where they are at home they propagate themselves freely by sending up suckers in abundance, which quickly become trees. They also will stand closer together without injury than most other trees; but, when really good useful timber is wanted as well as healthy ornamental trees, they ought, as well as all other trees, to be thinned in time.

As timber Elm is heavier than most common kinds of wood, the exceptions being Box, Thorn, and Beech, it is also less easily ignited than others, except it be Poplar, but it is not well adapted for house building, as it warps and shrinks excessively. Nevertheless, weather boarding and other things are often cut out of Elm, and, as it is not easily split, naves of wheels, blocks for iron standards, for wire fencing, and many other things are made of it; and boarding for the bottoms of carts and other things subjected to much wear are often made of Elm, as it is said to be the most durable of common woods except Oak when exposed to the alternations of wet and dry, and more durable than Oak when always wet.

J. ROBSON.

PICKLING.

NEVER, on any consideration, use brass, copper, or bell-metal kettles for pickling, the verdigris produced in them by the vinegar being of a most poisonous nature. Kettles lined with porcelain are the best, but if you cannot procure them, block tin may be substituted: iron is apt to discolour any acid that is boiled in it.

Vinegar for pickles should always be of the best cider kind. In putting away pickles use stone or glass jars; the lead, which is an ingredient in the glazing of common earthenware, is rendered very pernicious by the action of the vinegar; have a large wooden spoon and a fork for the express purpose of taking pickles out of the jar when you want them for the table; see that while in the jar they are always completely covered with vinegar. If you discern in them any symptoms of not keeping well, do them over again in fresh vinegar and spice. The jars should be stopped with large flat corks, fitting closely, and having a leather, or a round piece of oil-cloth, tied over the cork.

It is a good rule to have two-thirds of the jar filled with pickles, and one-third with vinegar. Alum is very useful in extracting the salt from pickles, and in making them firm and crisp; a very small quantity is sufficient—too much will spoil them. In greening pickles keep them very closely covered, so that none of the steam may escape, as its retention promotes their greenness, and prevents the flavour from evaporating. Vinegar and spice for pickles should be boiled but a few minutes—too much boiling takes away the strength.

RADISH PODS.—Gather sprigs or bunches of radish pods while they are young and tender, but let the pods remain on the sprigs, it not being the custom to pick them off; put them into strong salt and water, and let them stand two days; then drain and wipe them, and put them into a clean stone jar. Boil an equal quantity of vinegar and water; pour it over the radish pods while hot, and cover them closely to keep in the steam; repeat this frequently through the day till they are very green; then pour off the vinegar and water, and boil for five minutes some very good vinegar with a little bit of alum, and pour it over them; put them into a stone jar, and having added some whole mace, whole

pepper, a little turmeric, and a little sweet oil, cork it closely, and tie over it a leather or oil-cloth.

GREEN BEANS.—Take young green or French beans string them, but do not cut them in pieces; put them in salt and water for two days, stirring them frequently; then put them into a kettle, with vine or cabbage leaves under, over, and all around them, adding a little piece of alum; cover them closely to keep in the steam, and let them hang over a slow fire till they are a fine green. Having drained them in a sieve, make for them a pickle of cider vinegar, and boil in it for five minutes some mace, whole pepper, and sliced ginger, tied up in a thin muslin bag; pour it hot upon the beans, put them into a stone jar, and tie them up.

NASTURTIUMS.—Have ready a stone or glass jar of the best cold vinegar; take the green seeds of the nasturtium after the flower has gone off (they should be full grown, but not old), pick off the stems, and put the seeds into the vinegar. No other preparation is necessary, and they will keep a year with nothing more than sufficient cold vinegar to cover them. With boiled mutton they are an excellent substitute for capers.

TO PICKLE CAULIFLOWERS.—Take the whitest and closest full-grown cauliflowers; cut off the thick stalk, and split the blossom or flower part into eight or ten pieces; spread them on a large dish, sprinkle them with salt, and let them stand twenty-four hours; then wash off the salt, drain them, put them into a broad flat jar or pan, scald them with salt and water, allowing a quarter of a pound of salt to a quart of water; cover them closely, and let them stand in the brine till next day; afterwards drain them in a hair sieve, and spread them on a cloth in a warm place to dry for a day and a night; then put them carefully, piece by piece, into clean broad jars, and pour over them a pickle which has been prepared as follows:—Mix together 3 ozs. of coriander seed, 3 ozs. of turmeric, 1 oz. of mustard seed, and 1 oz. of ginger; pound the whole in a mortar to a fine powder; put into three quarts of the very best cider vinegar; set it by the side of the fire in a stone jar, and let it infuse three days. These are the proportions, but the quantity of the pickle must depend on the quantity of cauliflower, which must be kept well covered by the liquid; pour it over the cauliflower, and secure the jars closely from the air.

You may pickle broccoli in the same manner; also the green tops of asparagus.—(*Miss Leslie.*)

NEW AND RARE PLANTS.

RHODODENDRON CALOPHYLLUM (*Handsome-leaved Rhododendron*).

Forty-three species of Rhododendron were discovered by Dr. Hooker in the Sikkim Himalaya Mountains, and yet Mr. Booth shortly afterwards discovered sixteen more, of which this is one. It blooms in May; flowers white, tinged with green.—(*Botanical Magazine*, t. 5002.)

DENDROBIUM NOBILE, var. PALLIDIFLORUM (*Pale variety of Noble-flowered Dendrobium*).

Like the species, probably, it is a native of China. Flowers white, tinged with pink, but not handsome.—(*Ibid.*, t. 5003.)

VIOLA PEDUNCULATA (*Long-stalked Golden Violet*).

Sir W. Hooker says it is "the handsomest of the genus, but lacking the fragrance of the great favourite, the *Sweet Violet* of Europe." It was found by Douglas in California, but introduced here by Messrs. Veitch, of the Exeter and Chelsea Nurseries, through their collector, Mr. Lobb. Flowers yellow, with streaks of crimson on the front of the three lower petals, and a purple blotch at the back of the two upper petals. Requires a cool frame. Blooms in May.—(*Ibid.* t. 5004.)

AZALEA OCCIDENTALIS (*Californian Azalea*).

This was found by Douglas and Hartweg in California, but was introduced by Messrs. Veitch from their collector, Mr. W. Lobb. Flowers white. "The present is the only

Azalea of North America found to the west of the Rocky Mountains."—(*Ibid.*, t. 5005.)

AGAVE DENSIFLORA (*Close-flowered Agave*).

Supposed to be a native of Mexico. Scape six feet long. Not beautiful enough to deserve culture.—(*Ibid.*, t. 5006.)

GREVILLEA ALPESTRIS (*Mountain Grevillea*).

Native of South Australia; bloomed in the greenhouse of Messrs. Rollisson's Nursery at Tooting last May. Flowers not very bright red, passing into yellow in their upper half. "In Australia it flowers throughout the year."—(*Ibid.*, t. 5007.)

QUERIES AND ANSWERS.

KEEPING APPLES AND PEARS.

"As a subscriber would you oblige me with the information as to which is the best way of keeping Apples and Pears for the longest possible period for table use?"—G. G. S.

[We had upon our table on the 26th of last July a dish of *Sturmer Pippins* gathered in September, 1856, together with another dish filled with *Early Harvest* Apples of the present year. This is a tolerable proof that our system of keeping fruit is successful. It is told in a few words. We pay no attention to the old ignorant dogmas about putting fruit into heaps to sweat, and then wiping the fruit before storing. We gather the fruit during a dry day, and put it at once into earthen glazed pans deep enough to hold two or three layers of fruit, and each pan having a tightly-fitting lid. If the fruit sweats the exudation dries on the fruit's surface, and helps to keep in the moisture and flavour. The cover helps to do the same, and to exclude the light. We keep the pans in a dry, cool room, and never wipe the fruit until required for dessert. Pears are kept equally well in this way, but they must be sedulously watched, for when a pear is ripe it should be eaten forthwith; its flavour afterwards diminishes daily. It is best to bring a few in a covered pan into a warm room to hasten their ripening, so that there may be a more protracted succession of them.

The following remarks, taken from "Hovey's Magazine," are well worthy of observance:—

"It should be distinctly understood that no summer Pear should be allowed to ripen on the tree; there is no exception to this rule. There are a few which are barely eatable, but in most instances they are nearly worthless. Some become as dry and mealy as a baked potato, and not near so good; while others rot at the core, though seemingly sound on the surface. It is because most of the summer Pears are allowed to ripen on the trees that many of the best varieties have been pronounced unworthy of cultivation. We have ourselves been astonished at the difference of quality in some Pears, which had been picked only a day or two earlier or later than others; and this difference long since induced us to try experiments with several of the more capricious kinds. With one new variety we were quite puzzled to hit upon the exact period of gathering. One year we picked them very early, but as they had not attained their growth, though juicy and good, they were quite astringent; the next year we gathered a few every three days till the last were fully ripe on the tree, and by this means were enabled to ascertain the right period. Those left on the trees until they were nearly yellow were dry, flavourless, and scarcely eatable, while those gathered about ten days previously were deliciously melting and rich. Experiments with other kinds resulted in fixing the period of gathering the August Pears for house ripening from ten to fourteen days, though much depends on the season, vigour of the tree, &c. The only requisite is that the fruit should have attained its growth, and the sooner it is picked afterwards the better. This may be known to the cultivator by the change which takes place in the appearance of the fruit. Some of the defective specimens will turn yellow and drop, while the others will assume a smoother and paler surface; the colouring on the sunny side will be brighter, and the stem will become swollen, particularly at the junction with the tree. These indicate

that the period of maturity is approaching, and the fruit may be gathered and ripened.

"The ripening is a process as little understood as the period of picking, and various directions have been given on this subject by different writers, some advising fruit to be spread out upon shelves in the fruit room, and others to be kept in boxes and drawers, excluded from the light and air. We have found that very few early Pears will ripen well when exposed to the air on open shelves even in a tolerably close fruit room. At this season of the year the atmosphere is too dry, and the currents of air too great, and the juices are too rapidly exhausted. It is far better to place the fruit in boxes of moderate size, and let them stand in the fruit room, or some other cool and rather dark place, where they retain their juices better than if exposed on open shelves. We have tried this experiment, and found that those fruits kept in small quantities in a drawer shut out from the light were more juicy, higher flavoured, and more delicious than when preserved in other ways. As a general rule we should advise all early Pears to be placed in boxes or drawers, covered with one or two thicknesses of paper, and kept excluded from light and air, where the temperature is cool and as even as possible at that season. A damp, cool cellar is not so favourable a place as a cool, dry room, as the former checks the ripening process too suddenly. Such a situation will do for the autumn and winter Pears, but not for the early kinds."]

DELPHINIUM FORMOSUM BLOOMING TWICE.

"The *Delphinium formosum* (see p. 351) was sown, February 28th, in a seed-pan, and placed in a cold frame. When the seedlings were sufficiently advanced they were pricked off into pots, and planted out in May. Of course they are not so strong as they will be another year. One plant is throwing up very strong stems for the second crop of flowers. I do not think it is so handsome as *D. magnificum*, which, to my mind, is the best when well grown."—A. R.

[Very good, and therefore it may safely be predicted that this and other perennial Larkspurs may be sown in pots and pans in September, and kept in pits, frames, or greenhouses like scarlet Geraniums, and be in bloom before the end of May in the open ground, or, with a very slight increase of temperature, come in for mixing with forced and spring flowers to decorate and diversify the show-house and conservatory.]

ROSE PILLARS.—WINTERING BEDDING PLANTS.

"I am desirous of getting up some Rose pillars, and I wish to know how I am to prune the different sorts for the purpose. I am told that *Ruga* and *Félicité Perpétuelle* (climbers) should not be pruned at all, and I think I have also read that for pillars the plants should be cut down the first two years very close to the ground in the winter. I wish to have the following Roses for pillars:—

"*Ruga*.—Plant has made three good shoots five feet long.

"*Félicité*, ditto.

"*Jules Margottin* (perpetual).—Plant two years old; was not closely pruned last winter, and is growing only at top, and very slowly.

"*William Griffiths* (perpetual).—Plant one year old, growing vigorously.

"As the advice given me is conflicting your instructions as to how to prune the above for my purpose will oblige. Also, will it be safe to winter bedding plants in a cold greenhouse—that is, without artificial heat?"—A NOVICE.

[It is only when climbing Roses as pillar Roses are fully established and have nearly filled their places that pruning can, or ought to be, dispensed with in a great measure; that is, an annual cutting back of all shoots; but all plants in cultivation, from a forest of Oaks to a bed of Mignonette, require to be thinned more or less occasionally, and so must all Roses. One general rule is quite applicable for all perennial climbers in Great Britain and Ireland, and to most of our colonies, and that rule is that at the end of the first growing season every one of them ought to be cut down to within one foot of the ground, even if they or any of

them had grown fifty or one hundred feet that season. Some should be cut to six inches the first year, and all climbing Roses are in this class; some ought to be cut to four inches, some to three inches, and some to the last inch. Your *Ruga* and *Félicité* must be cut down to eight inches at the end of next October, as they were not rightly cut last autumn; and recollect to cut *all* these Roses at the end of October every year till they fill their space. After that the end of February and the first half of March will be the proper time as long as they keep in health; but the moment a vigorous climbing Rose, or a strong healthy Rose of *any* class, shows signs of weakness from any cause, begin to cut or prune again in October.

Jules Margottin (a fine Rose) ought to have been pruned down last year to six inches. It must be pruned to the bottom of the bare wood next October, but a year is not lost altogether through your haste to get it up unlawfully. The roots are pretty strong, and now and next year you shall see a grand start.

William Griffiths (another beauty). The strongest shoots to be cut to six inches in October, and the weak ones to three inches or under, and no grumbling or hesitation at all in the matter. Trying to get rich too soon and unlawfully will not more surely bring a man to the gallows than attempting to establish climbers at full length before their roots are sufficiently strong and active will disappoint the owners thereof. But this world is so full of baseless theories that one is certain of conflicting opinions till he comes to the fountain of downright honest, practical experience; and the most upright in our day is most certainly THE COTTAGE GARDENER.

A cold greenhouse without artificial heat is much worse for wintering bedding Geraniums than a cold room with a good window in a dwelling house. After that a good deal depends on how long the plants are left out of doors. The longer they are left out the more difficulty there is in keeping them, and if the frost touches them before they are housed all the gardening and glass and fire in the world will not save the frosted parts, and the parts next to the frosted will be ten times more liable to decay than such parts on plants that have been got up in time and before the frost.—D. B.]

WINTERING BEDDING PLANTS.

"As I have no greenhouse you will very much oblige by informing me in your next number whether I can keep during the winter months my *Tom Thumb* Geraniums, *Verbenas*, *Calceolarias*, and *Fuchsias* in my Cucumber frame, bricked all round. It is eight feet by six feet."—EDGBASTON.

[If you have dung in your frame remove it and use a stage of boards. If you do not remove it spread dry coal ashes over it, and on these set your plants if you do not make a platform of boards over them, which would be better, because the air would circulate beneath, among, and around the plants. All will be required to be protected from frost. That avoided, keep them as cool and airy as possible. The less they grow from November to February the better will they do afterwards. The *Calceolarias* will stand most moisture. The *Tom Thumbs*, if old plants, may be nearly dry; if young plants they must grow slowly, and be just as moist as will keep them from flagging, and no more. Old *Fuchsias* will want little trouble. They will get pretty well all the moisture they require from the atmosphere; but young ones must be kept growing very slowly. *Verbenas* are impatient of a close, moist atmosphere, and for them, if not planted out, the pots should stand on boards elevated above the surface of the beds. As damp will be your great enemy avoid spilling one drop of water in the pit. If a plant really wants watering lift it out, and let it drain well before replacing it. In mild weather give all the air you can, but avoid every drop of rain. In bright, very frosty days, instead of giving too much air, shade to keep down the temperature. In frosty weather of long continuance, and gloomy, if the temperature inside is only from 35° to 38° or so, the plants will take no harm if covered up several days, or even weeks, if they are gradually exposed to light afterwards.]

FRUIT TREES IN VINERY.

"I have a conservatory about thirty feet long by twelve feet broad. It runs east and west, facing south. It has a span-roof, and a wall at the back or north side. It is about fifteen feet high at the centre. I have Vines trained up each sash, and this year they have done well. The house is heated only just to keep out frost. The centre of the groundwork round which the flue goes is a bed in which I have had *Camellias*, &c., but they do not flourish. My reason for troubling you with this explanation is to know if you think *fruit trees* in pots sunk in the soil would answer in such a house, and also if fruit trees would do against the back wall, and, if so, what kind and sorts of fruit trees ought I to have? and ought they to be procured in the autumn or spring?"—KATE.

[Before doing anything see what Mr. Fish says in his review of Basing Park as to growing one kind of fruit in one house. In an article some time ago you would see how such a late vinery may be used as a greenhouse, chiefly containing *Camellias*, *Azaleas*, and *Epacris*, with bulbs. We do not know how your *Camellias* do not thrive in such a house, unless it be that you sink your pots in the soil, and thus interfere with their drainage; and, perhaps, your bed being low, they do not get so much of the sun as they would like. Now, the same causes of failure will apply to fruit trees, and neither will they do any good if the roof of your house is thickly covered with the foliage of the Vine, and more especially if there is not somewhat high glass in front, on which Vine foliage is not allowed to grow. If your Vine stems are from four to six feet apart, and the lateral bearing shoots are stopped at, or the next eye beyond, the fruit, then you may have Peaches and Nectarines against the back wall, and the same with Figs in the centre bed, but do not plunge the pots. If they are merely set on the soil it will do. If you do this you change your conservatory wholly into a fruit house, and flowers must be next to wholly dispensed with. Unless you have other resources we should almost be sorry that a lady should be obliged to deny herself house flowers; and did you, after all, prefer them to secondary fruit, then we would continue the Vines, &c., cover the back wall with *Camellias* and Oranges, erect a small table stage over the centre bed, and there and round a front shelf keep some flowering plants all the season. *Camellias* would flower all the winter and spring. *Epacris*, *Cytisus*, *Primula*, *Cyclamen*, bulbs, *Deutzias*, &c., would bloom on the shelves, to be followed by *Pelargoniums*, and then *Fuchsias* and tender annuals. If you make up your mind and want any additional information we shall be glad to assist you. Get the trees in autumn.]

WATERING SEEDLINGS IN A HOTBED.

"A CONSTANT SUBSCRIBER' will thank THE COTTAGE GARDENER to inform her of the best plan to water tender annuals in pots in the hotbed. She has tried every plan she could devise—the finest watering rose, syringe, and the dusting with the hairs of a wetted brush mentioned in one of your numbers. Not any of these plans answer, for when watered the water appears to stand on the surface as if the mould was greasy, the surface incompletely floated, which ruins the young plants, should any have appeared, and almost always prevents the seeds coming up as they ought, let the watering be done as carefully and gently as possible."

[If you read carefully the directions on window gardening, from which you seem to have taken some of your practice, you will see that for all tender small seeds not too old much stress is laid on having the pots thoroughly moistened, and then dried on the surface before sowing, and covering with a glass, &c., afterwards, to prevent the moisture evaporating. This will be sufficient to bring up the seedlings. If very small and thick watering them carelessly will cause them to shank off to a certainty. The water will never stand on the surface as you describe unless it is very dry. In such circumstances instead of watering overhead, as many clever young gardeners do, we prefer to pour the water by means of a piece of crock or shell close to the side of the pot until the whole surface is slowly but fully covered, taking care the water is of the same tempera-

ture as the atmosphere, and that a cold air gives no check to the plants.

In very particular cases we set the pot as high in water as to be within a quarter or half an inch of the surface soil and small seedlings, and let it remain until the moisture has risen through the drainage hole to fully that height. The little things thus receive moisture to the roots without inundating their little stems. But one thing remains—prick off. It need not be singly, but in little patches, as soon as you can take hold of them.]

TO CORRESPONDENTS.

POTATO CULTURE AND DISEASE (*Cestrensis*).—It is quite true that the parties you refer to have a Potato which has never been diseased. Their mode of culture, &c., will be published in our columns next week.

DISEASED GRAPES (*Vitis*).—They are attacked both by *shanking* and the spot, two forms of ulceration which always betoken that the growth of the fruit is more rapid than the roots can supply. It is impossible for any one who has not the Vines under his personal observation to tell the cause of this. More air and less moisture in the house, with more warmth and more moisture at the root, would probably remove the evil. We should try what would be the effect of removing the soil from immediately over the *fibrous* roots, and putting some warm dung over them.

CEANOTHUS AZUREUS (*T. M. W.*).—Turn it out from the pot at once under a south wall, and train it up against the wall. Hearty thanks for the book, which we will notice in some way.

BRITISH PLANTS (*A Constant Reader*).—Sowerby's "British Botany" is the best book, as you require illustrations, but it is very dear.

FUCHSIA (*A. S. A.*).—Nothing reached us but a few *very* dry leaves.

MOVING A CHINESE ARBOR-VITÆ (*S. G. Wood*).—There is hardly an evergreen which is more safe to move in a large state, or is more improved by transplanting into better soil, than the Chinese Arbor-vitæ (*Biota orientalis*). We moved one about the same size and age as yours in 1853, to be near a fellow to it of equal beauty, and from then the transplanted one is the best of the two. Your tree will want nothing done to it till next March, when it should be watered twice, also three times in April, and four times in May and June: four large watering-potsful to be given each time. The diameter of the cup round the tree to receive the water must be considerably less than that of the ball, so as to force the water to *pass through the ball*, and not through the loose ground. Provided the ball is kept from getting dry the first season there will not be the least fear but the young roots among the loose soil will get abundance of it. You planted it exceedingly well, and at the best time of the year. We have only begun such planting this day, the 14th of September, and we have to remove about five dozen evergreens from eight to eighteen feet high, but they were prepared at the roots last May.

STORING SCARLET GERANIUMS (*A Three-years' Subscriber*).—Mr. Kidd will no doubt give the "full particulars." Like the rest of the good gardeners he reads *THE COTTAGE GARDENER*, and is not loath to tell the world what he does and how he does it. As he has a full stock of old scarlet Geraniums he will most likely cut them all down to the old, dry, hard wood and a little of the small fibrous roots, then spread them out to dry in an open shed for a week, after that lay them in by the heels in moist soil three or four inches thick, with a covering of hay between the rows as thick as the stems are high, so that he can just see the cut ends of the shoots and no more. When the frost comes he will put a covering of hay a foot thick all over them, and round the sides. When the frost is over, or between one frost and the next, he will take off part of this covering here and there to see what state the plants are in. He will be in no hurry to uncover them in the spring, but when they begin to grow freely he must give them light; but he may have a better plan altogether. There is not a gardener in England sufficiently acquainted with making wine; but we send your questions among them, and we should like to hear from them on the subject.

PLANTS FOR BACK WALL OF STOVE (*H. H.*).—You could not have anything better than *Stephanotis floribunda*. For beauty of foliage you might join with it *Cissus discolor*, and give it the shadiest part. For beautiful flowers and fine fruit try *Passiflora quadrangularis* or *P. Buonanaparte*, and set the blooms, or the fruit will not swell. These three would be sufficient, and the first and third must not be shaded much, or the wood will not be sufficiently hardened. If any room should be left in the warmest place try *Combretum purpureum*.

CLIMBER FOR A COOL GREENHOUSE (*Gloxinia*).—*Cobæa scandens* is a large one, and would answer well. As you speak of sowing we hardly know of one that would look well the first year, except such annuals as *Tropæolums* and *Ipomeas* or *Convolvuluses*. *Maurandya Barclayana* would be neat and pretty, but then a nice plant next spring would suit better, and bloom all the summer and autumn. As a hard-wooded plant we would recommend *Mandevilla suaveolens* or *Passiflora carulea*.

HEATING A LARGE FRAME (*W. W.*).—We do not clearly see through your plan. You have no regular boiler. Your tank, we presume, is to act as such; but then you seem to have brick below, and brick on the sides of it, and without that we fear it would soon burn out. If you heat that well you will also heat the lead pipes in connection with it; but these, though fair conductors of heat, are not good radiators; at least, we have what we think reasons for thinking so. Besides, your tank must be covered securely, or the moisture from it in cold weather in winter will do it as much harm as the extra cold. You have a lofty pillar from whence to topple your fuel

down to the fireplace, and a good-sized chimney to take the draught from the fireplace. We should be inclined to have a small common fireplace in the usual way, a small flue right through, a small chimney with damper at the other end, put a chamber round the flue with open boards or clinkers, and trouble ourselves neither with tank nor pipes.

FLUE HEATING (*Constant Reader*).—Do you propose having your earth touching the top of your flue, or on some sort of a flooring separated from it? If the latter the brick pillars over the flue will answer very well. You would see an article lately on growing Melons, Cucumbers, and Pines by means of a flue; but there was a flooring of strong slabs and clinkers above it, and openings, such as round drain tiles would give, back and front in almost every light, to let up the heat when necessary, and plugged down when not wanted, or when there was not enough of bottom heat. If your flue is not strongly built you must mind you have no burstings and discharges, or farewell to your early Cucumbers if these openings for heat are open. Read the article in question in the present volume. We are much obliged, but never depreciate what you may glean from gardeners.

PLANTS IN COLD CONSERVATORY (*Carig Cathol*).—We used to bloom the *Leonotus* very well treated as a *Salvia*, struck in spring, stopped, planted out at the end of May in a sunny border, well watered, mulched, supported, taken up and repotted at the end of September, shaded a little, and put in the house by the end of October. We suspect your plant has not had enough of sunlight. The *Cantua* should have all the light possible in the autumn months, no more water than will keep it from flagging, and kept dryish and coolish, so as to be safe in winter. When the sun gains power in spring it will want more watering, and if the wood has well ripened the bloom-buds will follow. Every well-ripened bud on the *Tecoma* will produce a shoot of bloom, whether that bud be on a short spur or a long shoot, but if the wood is green and pithy you will never have a flower. Curtail growth so that the wood be hard and firm, and you will succeed. We cannot identify the *Clematis*, or whatever it is, for it is written *Clematite*; but if it will not bloom more sunlight and pruning the roots will no doubt make it do so, as it is so luxuriant.

EXOTIC SEEDS (*A Lover of Nature*).—Your Butter seed we presume to be a *Bassia*, and your Tulip very likely *Tucca aspera*. We should only be tantalising you if, in your circumstances, we led you to suppose that you could do anything with the seeds and roots named. Perhaps some gardener with room to spare in his hotbed and stove might be disposed to oblige you. For ourselves we have been compelled to decline hosts of such favours, to the great surprise of the donors. Things collected except by a botanist are not likely to repay for the room they take in raising. We have made arrangements for a series of papers on the management of *Aquariums*.

NAMES OF PEARS (*G. H.*).—The large one is *Dunmore*. That which has a highly-coloured red cheek is *Auch Chisel*. The small one is neither ripe nor fully grown, and we cannot tell what it is.

NAMES OF PLANTS (*An Old Subscriber*).—Your *Salvia* is *Salvia coccinea*, as near as we could judge from such a diminutive specimen. Thanks for the *Hypericum*. (*D. McE.*)—We think it is *Zichya heterophylla*, but are not certain. (*Staines*).—Yours is the Cornel Cherry, *Cornus mascula*. (*H. W. E.*)—The white-looking shrub is *Santolina chama-cyparissus*, or Lavender Cotton. The Mint is the golden variety of the common *Mentha sativa*. (*E. Q.*)—*Rudbeckia hirta*, hairy autumn Rudbeckia.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

- OCTOBER 1st and 2nd. WORCESTER. Sec., Mr. G. Griffiths, 7, St. Swithin Street, Worcester. Entries close Sept. 19th.
- OCTOBER 7th. SOUTH WEST MIDDLESEX AGRICULTURAL SOCIETY. At Gunnersbury Farm, Ealing. Sec., J. Gotelee, Hounslow.
- OCTOBER 8th. BUCKS AGRICULTURAL SOCIETY. Sec., Mr. Charles Fuller, Chiltern House, Wendover, Bucks. Entries close Sept. 24.
- OCTOBER 8th. BRIDGNORTH. Sec., Mr. R. Taylor, Bridgnorth. Entries close 1st of October.
- NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.
- DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.
- DECEMBER 30th and 31st. BURNLEY AND EAST LANCASHIRE. Entries close December 1st. Secs., Mr. Angus Sutherland and Mr. Ralph Landless.
- JANUARY 1ST, 1858. PAISLEY. Poultry, Pigeons, and Fancy Birds. Sec., Mr. W. Houston, 14, Barr Street, Paisley.
- JANUARY 4th, 1858. KIRKCALDY POULTRY AND FANCY BIRD SHOW. Sec., Mr. Bonthron, jun., Thistle Street.
- JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE. ham.
- JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.
- FEBRUARY 3rd and 4th, 1858. PRESTON AND NORTH LANCASHIRE. Secs., Mr. R. Teebay and Mr. H. Oakey, Preston.

N.B.—Secretaries will oblige us by sending early copies of their lists.

SELL YOUR SURPLUS STOCK.

THE time of year is now come when the chickens begin to take up as much room and to eat as much food as their parents. As with boys at sixteen, the question *forces* itself upon our attention, What is to be done with them? The answer is ready—Turn them to the best account by allotting

to them such pursuits as they are fitted for. Do you want eggs or fowls, or both? We advise all who have the convenience for doing so to keep some Cochins or Brahmas for winter layers, and Dorkings for table birds in the summer.

The first duty to be performed at this time in a poultry-yard is to get rid of all faulty birds. They are now good sized and full of meat. They are young and tender. They will now make a return for the food they have consumed; but if they are kept longer every grain they eat is a waste, and if, as we assume, they are early hatched, they will get harder and less fit for the table every day.

But if fowls are wanted for laying *only* there is no occasion to be so strict, because a clean-legged Cochin, or a red-faced Spanish, or a single-combed Hamburgh, will lay as well as a first prize bird of either sort, provided *they are young*. This proviso is most important. No condition or feeding will make an old bird lay through the winter. You may force her to lay a few eggs, but it will exceed all your powers to induce continuous laying from old hens. The smallest place should be given up to the layers, and the table fowls should have the run of the yard and field. Cochins bear confinement, and do not suffer from it. They will lay you as many eggs, and they will look as cheerful and as ruddy, in a place of eight yards square as if they had as many acres to roam over. They will begin laying in November, and will keep on till February; they will then want to sit, and that will be just the time when your Dorkings are laying. We think, then, that by proper arrangement, a poultry-yard may be now so managed as to secure eggs all the winter and early chickens in the spring at small expense. We have treated here of poultry for table purposes only; but there is no reason why, by proper selection, good exhibition birds should not be found in yards where many are bred.

DELAY IN SENDING DIRECTION LABELS.

TWICE this season I have paid entrance fees for the exhibition of poultry, and returned the proper forms sent me by the Secretaries for that purpose. In each case I have been unable to forward my birds in time for the show, in consequence of the delay in transmitting to me the direction labels, whereby I have been put to great inconvenience, besides being deprived of the chance of gaining prizes and the sale of my birds. I reside five miles from, and consequently am not able at short notice to get my poultry conveyed to, a railway station. Again, many towns where the principal shows are held are two days' post from hence. If, therefore, a show is to take place say on the 10th of the month, the direction labels posted at Birmingham, Gloucester, or Bradford on the 6th would not reach me till the afternoon of the 8th. How, therefore, would it be possible for me to get the birds conveyed to either place in time for the exhibition? Of course other breeders are subject to the same inconvenience, which might be easily remedied in the following manner:—If on receipt of the entrance money the Secretary were to forward to the exhibitor the proper direction labels for his baskets, it would be a sufficient guarantee for the latter, and would prove much more economic, as regards the saving of postage stamps, paper, and envelopes, to the promoters of the show. —G. RAY.

PIGEON MATCHES.

THERE are very few subjects on which a greater amount of misconception prevails than respecting the kind of Pigeons employed in conveying messages or in flying homing matches, and the method of training and employing them. Most persons, misled by the name, imagine that Carriers are selected for this purpose, whereas they are rarely if ever used, being far too heavy and slow of flight for the purpose. In London the birds flown are, in the great majority of cases, *Skinnums*, or such birds as may be produced by crossing a Dragon with a strong-flying Tumbler or other variety: thus very good homing birds may be bred between a Dragon and an Owl. But little

regard is paid to colour, blues and chequers being most common. Some of the self-coloured blues are, apart from all fancy considerations, very showy, handsome birds.

Those of our readers who are accustomed to look in our celebrated sporting contemporary known as *Bell's Life* need not be informed that such paragraphs as the following are of weekly occurrence:—"Bill Smith is willing to fly his blue hen against Tom Jones's chequer for thirty miles on the Oxford road for £2 a side. His money is ready at the Tub and Tinker, Brick Lane." These matches are generally flown with old birds; but another common practice is to fly young birds of some three months or so for shorter distances in a sort of general race. The birds are entered shortly after they have left the nest, whilst their voice is of that peculiar infantile character that has caused them to be designated "squeakers." Each bird entered is indelibly stamped on the wing feathers, and a weekly payment, varying from sixpence to half a crown, is made by each contributor. The birds entered are practised in different directions around London as much as possible, and on a day previously fixed they are all taken to the general house of meeting, and sent from thence ten or twelve miles out of town, the particular road being determined by lot, thus rendering it necessary that the birds should have been previously practised in every direction. The birds are all let loose together, and the first one shown at the house of meeting wins the sweepstakes. In order to equalise the distance that each bird has to be carried after having been caught at his own home, the place of meeting is usually situated as nearly as possible half way between the two extreme subscribers, and those who live intermediate distances are required to run a certain distance past the rendezvous and return. Where any considerable distance intervenes a relay of swift runners is appointed, so that not a moment may be lost.

The training these birds receive is simply flying them short distances at first, which are gradually increased in length. If possible the birds are practised in the direction in which they are required to fly, as it is found that no time is then lost in flying round in gradually increasing circles until some familiar object is observed, for the landmarks are then familiar to the bird.

Amongst the erroneous ideas prevalent on the subject is the notion that the birds will fly backwards and forwards, to and fro, whereas they will only fly in one direction, namely, to their own home.

Another error consists in the supposition that birds can carry letters of the ordinary size tied under the wing—a fatal hinderance to their flight. When messages are sent by them they must be written on a narrow strip of thin paper, say three inches by three quarters of an inch, rolled round the shank of the leg, and secured by a thread. In flight the foot is drawn up into the feathers, and no resistance is offered to the passage of the bird through the air.—W. B. TEGETMEIER.

A POULTRY ADVENTURE.

"PLEASE, sir, there's four more chickens gone last night." This met me when I came down in the morning.

"Well," said I, "it must be seen to."

"I heard," said a maid-servant, "a great uproar among them in the night."

I looked very serious, and repeated, "This must be seen to;" adding, "Next time you hear an uproar call me." "You know," said I to the man, "it is too bad to lose three or four every night in this way."

He looked down and round the room till his eyes met a favourite white cat, and then said something which ended in "cat."

Two little girls made a rush directly, and pussy was caught up, while they indignantly denied the imputation on their favourite.

There were a great many chickens in a small orchard of about three quarters of an acre. The hens were all under rips. Everything was examined during the day, and search was made for evidence to detect the culprit; it was unavailing, and the cat was suspected. The little girls hid her before they went to bed.

About half-past nine I was at supper, when the maid rushed in.

"There is the uproar again among those things in the orchard!"

I ran out, and it was indeed an uproar—chickens running about screaming, hens making every noise that they can make. I was especially led to one. She had four chickens left of fifteen, and she had lost the four the previous night. One of her poor surviving brood lay bleeding outside the bars of the rip, another was partly eaten, and the remaining two were not to be found. I could see nothing in the rip, not even with the aid of a candle; but satisfied, from the hen's attitude and excitement, that the offender was there, and believing it was a rat, I fetched a dog, and turned the rip suddenly over. There was in one corner rolled up the largest hedgehog I have ever seen. I immediately killed it, and have lost no chickens since. I am sure I speak within compass when I say it had taken *thirty* chickens.

THE EFFECT OF THE SEASON ON FOWLS.

THE drawing in of the days and the comparative chilliness of mornings and evenings warn us that the summer is gone, and that warmer clothing will soon be required. The dislike to meat is fast passing away, and the popping of soda-water corks is heard less frequently. Everything tells us we are now in a state of transition, and careful elderly relatives warn all, and especially sickly ones, that they must take care of themselves.

Fowls are as subject to these changes as we are, and they are now at a trying time. The old worn-out plumage of the spring and summer is being shuffled off, that the new feathers may supply warmth during the winter. This is an effort of nature, and the birds should now be more generously fed. There is not so much food to be found in the grass and on the ground, and they require a little stimulating. If you have young chickens be careful to feed them the last thing at night and the first thing in the morning. The nights are getting long for them. In the cold, drizzling, rainy days we have sometimes at this time of the year give them some bread soaked in strong beer. If you have no sheltered places for them make some. They are only required temporarily, and a few hurdles will make them. Feed three times every day, and let two meals be of soft food.

PIGEONS.

CLASS 10.—CRESTED PIGEONS (*Columba domestica cristata*).

I AM somewhat doubtful if I ought to place this almost fabulous variety so prominently before my readers, and assign a class to a bird the existence of which is scarcely established; and I can only recount the rumour I have heard that at Constantinople Pigeons are to be met with which have crests like our crested fowls. I believe inquiries and search are being made to obtain some of the variety in question, to bring them to this country, but as yet they have not succeeded.

In the old *POULTRY CHRONICLE* of March, 1855, is a plate given of a Baldhead Pigeon having a crest of six feathers on the head, with the following description:—"This curious Pigeon is alive and in my possession. It is a pure-bred Baldpate, of which it has the properties, viz., clean cut, pearl-eyed, clean-thighed, and ten aside. It is the only one in the world, and is a cock bird. Several competent judges have seen it, and consider it a freak of nature; but, whatever it is, it is a wonder. Several of my friends wish me to breed from it to get more, but of this I am doubtful."—W. WOODHOUSE, *Mansfield Street, Kingsland Road*.

Shortly before the above account appeared a neighbour of mine, Mr. James Pryer, who is a Pigeon fancier and an acute observer, on whose accuracy I can depend, informed me he had seen something curious in the Pigeon line in Sevenoaks. He described it as a common chequered Dove-

house Pigeon, with some rather long feathers growing up from the head. When Mr. W. Woodhouse's plate appeared in the *POULTRY CHRONICLE* I showed it to him, and he assured me that, so far as he could see, the Pigeon in question was crested just the same. We both made inquiries respecting it, but could not discover whence it came or whither it went.

It seems strange that nature should take two such similar freaks, but it goes rather to strengthen my opinion that a crested variety does exist, and that these curiosities are a cry back to a cross which may have happened very many years ago, even as at the present time some of the families of Turbits are crying back, and occasionally throw dark-tailed young ones such as the fanciers a century back admired.—B. P. BRENT.

P.S. I have to thank Mr. Tegetmeier for his information. My omission of the Silver-shouldered Turbits was an oversight; but, be the judges' opinions what they may, I still regard the smooth head as the original.

OUR LETTER BOX.

DISEASED POTATOES (*An Inquirer*).—We are feeding adult fowls with them after boiling and mashing the Potatoes, and mixing them with a little barleymeal. Your ducks might be fed in the same way.

UNFEATHERED CHICKEN (*T. M. W.*).—Kill it; for otherwise in the winter it will suffer greatly, despite all the care you may bestow upon it.

COCHIN-CHINAS APPARENTLY SPANISH (*Henricus*).—Wait until they are full grown. Black Cochins often appear among broods of pure-bred Buffs and Partridge-coloured. Mr. Punchard is too trustworthy a man to have deceived you. He has met you fairly, and if the chickens really grow up into cross-bred adults all that we should ask of Mr. Punchard would be to give as many more eggs as there occurred impure chickens in the first dozen.

WHITE DORKINGS WITH TOPKNOTS (*A Subscriber*).—There are no such fowls. White Dorkings have no topknots, and any birds resembling them and having such topknots must be a cross between them and the White Poland.

VARIETY OF PIGEON.—"Can you detect what Pigeon answers to the following description? viz., about the size of a Rock, tuft on the head like a Barb, yellow iris round the eye, head rather long, somewhat like an Archangel. They are good fliers. Plumage, bronze-coloured wings, with black flight and tails; feathers on the neck of a brilliant hue. I was told that they came from Australia, but perhaps you will know for certain."—A. B.

[I am unable to reconcile "A. B.'s" description with any variety of domestic Pigeon known to me. Had he described it as having a white head instead of a "tuft" I should suppose he alluded to the Australian Bronze-winged Pigeon.—B. P. B.]

LONDON MARKETS.—SEPTEMBER 21ST.

COVENT GARDEN.

Markets abundantly supplied and trade dull; indeed, heavy work to clear off the stands since a few fine days have enabled the growers to get down a large quantity of fruit. Foreign imports comprise *Melons*, *Grapes*, *Pears*, *Apples*, and *Plums*. West India *Pines* are now over. Among Vegetables none but the ordinary kinds are now to be had. *Potatoes* much diseased: large quantities to hand both coastwise and by rail.

POULTRY.

The demand for poultry continues unusually small. The supply of everything is more than ample, if we except Grouse. They are scarcer than we have seen for many years.

Large fowls	4s. 6d. to 5s. 0d. each.	Grouse	.... 3s. 6d. to 4s. 0d. each.
Smaller do.	3s. 6d. to 4s. 0d. "	Pigeons	..... 7d. to 8d. "
Chickens..	2s. 0d. to 2s. 6d. "	Rabbits ..	1s. 4d. to 1s. 5d. "
Geese	6s. 0d. to 6s. 6d. "	Wild ditto ..	10d. to 1s. 0d. "
Ducks	2s. 6d. to 3s. 0d. "	Leverets....	3s. 0d. to 3s. 6d. "
		Partridges	8d. to 1s. 6d.

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—September 22, 1857.

WEEKLY CALENDAR.

D M	D W	SEPT. 29—OCT. 5, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
29	TU	MICHAELMAS DAY.	29.449—29.137	63—40	S.W.	02	59 a. 5	42 a. 5	morn.	11	9 44	272
30	W	Ivy (Hedera).	29.789—29.566	65—41	S.W.	02	VI	39	1 20	12	10 3	273
1	TH	African Marigold.	29.818—29.796	64—42	S.W.	—	3	37	2 45	13	10 22	274
2	F	French Marigold.	29.820—29.758	67—50	S.	—	4	35	4 11	14	10 41	275
3	S	Marvel of Peru.	29.803—29.737	66—55	S.	10	6	32	rises.	☺	11 0	276
4	SUN	17 SUNDAY AFTER TRINITY.	29.735—29.637	66—56	S.W.	11	7	30	5 a 39	16	11 18	277
5	M	Cockscomb.	29.884—29.807	63—42	S.W.	03	9	28	5 57	17	11 36	278

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 63.5°, and 43.3°, respectively. The greatest heat, 80°, occurred on the 5th, in 1834; and the lowest cold, 27°, on the 2nd, in 1853. During the period 81 days were fine, and on 115 rain fell.

THE POTATO AND ITS CULTURE.

HISTORY.—The Potato, called *Solanum tuberosum* by botanists, is believed to be a native of Chili in South America, especially of the neighbourhood of Quito, where it is now found wild.

It was first brought to Europe in the fifteenth century by the Spaniards, who cultivated it in Spain under the name of *Battata*. The Potato was not known in England until about a century later, being first brought hither from Virginia, and known then as "Potatoes of America or of Virginia." They were not cultivated here extensively until the latter part of the last century.

VARIETIES.—We have now before us a list of more than one hundred and fifty varieties, and we have no doubt that if search were made as many more could be collected, for every district almost has some one favoured and peculiar sort. We shall only specify a few of the best, and which may be obtained readily.

Early Varieties. 1. *Walnut-leaved Kidney*.—This is the earliest, for, if kept in a dry, cool cellar until the eyes are sprouted an inch in length, and are then planted in a south border, the young Potatoes will be fit for use some time in May. They are somewhat larger than a pigeon's egg, and grow in a cluster close to the set.

2. *Ash-leaved Kidney*.—Treated as the *Walnut-leaved*, as just mentioned, this is ready for taking up in June. It is a much larger and much more productive Potato than the *Walnut-leaved*.

3. But, above all, a round white seedling Potato which we have now cultivated for two years *without having a single diseased tuber*. We have named it *The Onwards*.

Later Varieties.—We reject altogether from our list those which are very late before their tubers are ripe enough to take up for storing, because such very late varieties are the most liable to the murrain or "disease" which has of late years been so destructive of this vegetable. The produce of all the varieties in the following list is ready for storing by the end of July:—

4. *Forty-fold*.—An oval, flattened, red Potato.

5. *Julys*.—A round, white Potato.

These are all prolific, good-keeping, and mealy; and whoever cultivates Nos. 1, 2, and 3 will have all the excellencies obtainable in the Potato.

MODES OF PROPAGATION.—For useful production the Potato is best propagated by sets, and there is no doubt that the best sets are middle-sized whole Potatoes. By middle-sized we mean those weighing from an ounce and a half to two ounces and a half. Of the *Walnut-leaved* variety one ounce Potatoes are a good size for the purpose. None of the eyes should be removed, for the Potato, at first, rarely pushes up more stems than are needful for the well-being of its produce. We say "at first," because, if the first stems are destroyed by frost, more stems succeed them, and these sometimes require thinning.

When Potatoes for planting have to be procured from a distant place let that place be colder than the locality where they are to be planted. If had from a warmer

district they either vegetate earlier or ripen their produce more imperfectly than is desirable.

If each set weighs two ounces, and the sets are planted nine inches apart in each row, and the rows are at the distances mentioned in the following table, then will the number and weight required for an acre be as are there specified:—

	Number of sets per acre.	Weight of sets per acre.	
		cwt.	lbs.
Rows 18 inches apart..	38,720	43	—
" 19 "	36,682	40	104
" 20 "	34,848	38	97
" 21 "	33,188	37	4
" 22 "	31,680	35	40
" 23 "	30,302	33	88
" 24 "	29,040	32	44
" 25 "	27,874	31	12
" 26 "	26,806	29	100
" 27 "	25,813	28	88
" 28 "	24,891	27	84
" 29 "	24,033	26	92
" 30 "	23,232	25	104

There are various other modes of propagating the Potato, as by large tubers cut into sets; from single eyes scooped out from it; by thick pieces pared from it with an eye in each piece; and by cuttings of the stalks. By each of these modes a crop may be obtained, but it will be more liable to failure, and never so abundant as when moderate-sized whole Potatoes are used as sets.

To obtain new varieties seed from well-ripened Potato berries, or "Potato Apples," as they are popularly called, must be employed. To obtain new varieties by this mode is necessary, because no variety of the Potato retains its good qualities longer than about fourteen years. The mode of proceeding is as follows:—

Squeeze the pulpy contents of ripe Potato berries into a basin of clean water; mix the pulp squeezed out thoroughly with the water; strain the mixture through a fine cloth or muslin; dry the seed retained by the cloth, and keep it wrapped in paper in a dry place until sowing time. This may be in a gentle hotbed in February. Sow in pots of light rich earth, covering the seed about one-eighth of an inch deep with some of the same earth. When the seedlings are an inch high plant them singly in small pots, disturbing the roots as little as possible, and place them under a frame, or other place where they can be kept moderately warm, with abundance of light. They must have as much air as the season will permit, and the soil be kept moderately moist. In the middle of May they may be turned out from the pots, and planted in the open ground without breaking the ball of earth.

If you have no frame to sow in you must sow the seed in drills, covering it, as above directed, in some light rich soil early in April, and transplant the seedlings into similar soil during June.

Take up the Potatoes as soon as the stems become yellow in autumn, and keep the produce of each seedling separately; for the produce of each will somewhat differ from that of all the others.

TIME OF PROPAGATING.—In light, well-drained soil we prefer planting about the middle of November for the main crop; not because the crop is thereby obtained earlier, but because, on the contrary, the stems appear above ground later than they do from sets that have been stored in cellars or in other places, the warmth of which has induced the Potatoes to sprout. The late appearance of the stems above ground preserves them from the spring frosts. Potatoes in the soil during the winter are always more plump and vigorous than those kept unnaturally dry and warm in store places, whether these are cellars or heaps covered with straw and earth. This is proved by the generally admitted fact that autumn-planted Potatoes have been more free from the murrain than the spring-planted.

If not planted in November the earlier the planting takes place in the spring the better. February and March we prefer to April. For the earliest crops of the *Walnut-leaved* and *Ash-leaved* varieties the planting should not be in November, but at the end of March, and the sets should have sprouts about an inch long. These sprouts should not be removed nor injured, and should be pointing upwards when the set is planted. The stems will soon be above ground, and must be sheltered from the frosts and any inclement weather.

In heavy or wet soils the planting should be always in the spring; but be it remembered that such soils are quite unsuited for growing this root.

SOIL AND SITUATION.—A light, well-drained soil on a moderate elevation facing the south or south-west is that which produces the best crop of Potatoes. By best we mean not only the most abundant, but the most mealy and most free from disease.

In a heavy or wet soil the same variety is more "waxy" than when it is grown in a light, dry soil. A "waxy" Potato contains an unusually large quantity of gummy and watery components. A "mealy" Potato, on the contrary, contains a larger proportion of starch.

The Potato, like all other cultivated plants, is healthy and productive in a fresh soil, that is, a soil unexhausted by previous cropping, rather than in a soil enriched with manure at the time of planting.

If either a heavy or wet soil has to be planted with Potatoes it should be divided into beds about six feet wide, divided from each other by trenches or alleys two feet wide and two feet deep. These keep the soil as free from excess of wet as can be effected.

MANURES.—Recent experience has shown that stable manure applied to the soil either just before or at the time of planting promotes the attack of the murrain.

If the soil has not been lately cropped, or if it was manured for the previous crop, no manure should be applied for the Potato. Its produce may not be so abundant, but it will be more healthy. If the soil is poor no better manure can be applied to it at the time of digging at planting time than a compost of soot thirty bushels, common salt six bushels, and Epsom salt three bushels. These quantities are for an acre.

If stable manure is obliged to be used, owing to the soil being poor and no other manure at command, let it be dug into the soil as long before planting time as is convenient. The worst of all modes of applying it is to put it along the bottom of a trench, and to place the sets upon it.

If the soil is poor, and no manure, or not enough, was applied at planting time, then a top dressing of either guano or of fowls' or of pigeons' dung may be applied when the stems of the Potato are well above ground at the end of April or early in May. Three hundred weight of guano, or five hundred weight of fowls' dung,

or four hundred weight of pigeons' dung, are the quantities proper for an acre. They should be well mixed with equal weights of coal ashes, be sprinkled between the rows, and the surface immediately hoed over to cover the manure.

MODE OF PLANTING.—No mode is so good as digging a space sufficient for one row, and then inserting the sets by the dibble. This avoids the necessity of trampling upon the soil after it has been dug, and insures the sets being planted at the right depth, and being well covered up with the earth.

If planted in November the sets should be buried eight inches beneath the surface; but in spring planting a depth of five inches is sufficient.

In the rows the sets of the *Walnut* and *Ash-leaved* should be nine inches apart, and of the other varieties twelve inches. The rows of the two above named should be eighteen inches apart, and of the others two feet. When planted even no more than two or three inches nearer or further apart the weight of produce per acre will be diminished.

CULTURE.—To protect from frost the leaves of the earliest crops it is a good plan to draw the earth into a ridge three or four inches high on each side of every row, and to put sprigs of the Fir, or of Fern, or of Heath upon these ridges.

The hoe cannot be too frequently employed between the rows of Potatoes, care being taken not to go much deeper than an inch, so that the surface roots of the plants may not be disturbed.

In very dry seasons and soils we have known weak sewage water applied abundantly between the rows with great advantage. It is not required, but rather does harm by increasing the growth of stem if the soil is rich.

It increases the weight of produce if the blossoms are picked off so soon as some of the berries appear.

If the stems are more than three from any one set the weakest of those above that number may be removed advantageously. The produce is increased and ripens earlier by such a thinning.

The tops of the stems should never be cut off. The produce is reduced in quantity by such treatment, for the plant is exhausted by its throwing out side branches.

No more earth should be drawn up about the stems than is sufficient to keep the Potatoes nearest to the surface from being exposed to the light, for such exposure causes them to have a green colour. "Earthing up," as it is usually termed, retards the ripening of the crop full a fortnight. The practice, therefore, checks the obtaining of early Potatoes, and by retarding the later crop renders it more liable to "the murrain."

TAKING UP THE CROP.—Never take up the crop for storing, whether for table use or for seed, before the stems are so yellow that it is evident all further growth is at an end; but do not wait until the tubers are fully ripened. A Potato is not fully ripe until its outer skin will not come off when gently rubbed.

The best implement for taking up Potatoes is a three or four-pronged fork, and a dry period should be selected for taking up, not only because this facilitates the work, but because the Potatoes are then less liable to decay. It saves labour, and consequently expense, to sort the Potatoes into their different sizes at the time of taking up.

AMOUNT OF PRODUCE.—The largest weight per acre we know of was thirty-four tons and a half per acre.

An average crop varies from 250 to 400 bushels, of 90lbs. to the bushel.

STORING.—Potatoes taken up and stored in a cool, dry shed, with a layer of coal ashes between every two layers of Potatoes, are preserved as plump as those left where grown. This we consider the best of all the known modes of storing. Turf ashes, sand, or even dry earth answers as well as coal ashes.

DISEASES.—*The curl* is a curling of the leaves, which also become very dark coloured almost immediately after they appear above ground. The plant never makes much further progress, and there is no produce. This disease, we have found from experiments, is caused by the sets being exhausted, either by their sprouting repeatedly and having the sprouts removed, or by other bad treatment whilst in store.

Moist Gangrene, or Potato Murrain.—This of late years has been so destructive that it is pre-eminently distinguished as "the disease." Various, indeed, have been the causes assigned for its occurrence, all showing that the explainers had not sufficiently considered the phenomena of the malady, nor attended to the results arrived at by extensive growers.

Our own opinion is that it arises from weakened constitution consequent upon unnatural and forcing treatment during a long series of years. It is a fallacy to suppose that it is a new disease, for many can bear testimony to the accuracy of Mr. Appleby's statement in these pages that it has been known for at least thirty years past, and probably occurred long before that wherever Potatoes were ill cultivated year after year.

There is no force in the objection that even the tubers of seedling Potatoes are liable to "the disease," because it is well known that debilitated parents give birth to a debilitated progeny; and from our own experience we can testify, as already stated, that the tubers of a healthy seedling, treated as we have detailed, are not liable to this murrain. Experience teaches us that it is essential, for the entire avoidance of "the disease," that the tubers should be fit for taking up and storing before the last week in July. It is not difficult to account for this. The end of July is characterised by a prevalence of heavy rains and the occurrence of parasitical fungi, for it is at that period of the year that our Peas and Vines are especially liable to mildew, consequent upon the moisture combined with heat. Decay in the tubers of Potatoes, and the rapid development of the accompanying fungus, *Botrytis infestans*, are promoted by the same circumstances.

Let us not be understood to be of opinion that there are no other varieties which can be preserved from the disease besides those which we have enumerated. On the contrary, we believe that any very early variety, treated as we have treated our own, would, after a year or two, become similarly undiseased, and continue so if the same course of cultivation and storing were followed rigidly.

NOTES ON NEW OR RARE PLANTS.

ERYTHROCHITON BRAZILIENSE. Nat. ord., *Rutaceæ*.—Native of Brazil, as its name implies. Stem round, upright, branchless, about four feet high. Leaves two feet or more in length, broadly lanceolate, coriaceous, dark green; margins entire; petioles short, with a swollen joint near the middle. Peduncle about two feet and a half long, woody, strong, and branch-like, with several flowers opening in succession and continuously; pedicels short and thick. Calyx an inflated tube with two lips, one of which is subdivided, often both; red. Corolla a fleshy tube, about as long as the calyx, with a limb of five large, spreading, obovate segments; white.

This really useful stove plant is not so often met with in private collections as might be expected from its rare merits. It is properly a fine-foliaged plant, and the increasing taste for that class of plants will doubtless draw it out of its comparative obscurity, for at all seasons it is very interesting. Like *Theophrasta* it requires no branches to add to its symmetry, for it is perfect and peculiar, in the possession of a tufted top of long rigid leaves. It flowers throughout the year, confining its

blooming period to no particular season. Good peat and strong fibrous loam in nearly equal parts, with a little sand, appear to suit it best, and a perfect drainage is essential.

ARALIA LEPTOPHYLLA. Nat. ord., *Araliaceæ*.—Lately introduced from New Caledonia by Mr. Milne. Stem upright, round, and smooth, producing branches with difficulty. Leaves about two feet long, lanceolate, narrow, dark green, with reticulated silvery white veins, the mid-rib being particularly conspicuous from its prominence and bright colour; margin entire and slightly waved, gracefully drooping towards the extremities. As the plant has not yet flowered in this country I cannot describe the inflorescence, but it is, in all probability, worthless in a horticultural point of view. Its best quality is, doubtless, in the beauty of the foliage, and in this it is not surpassed by any other plant of the kind, for it combines beauty of form with pleasing colours; and the stem, from base to summit, being thickly and regularly clothed with these beautiful leaves, it presents altogether a charming appearance. One part peat and two parts good strong loam is the compost it succeeds in best, and plenty of moisture at the roots, but not stagnant with the moist warm atmosphere of the stove, is an essential requirement in the culture of this plant.

GOETHEA STRICTIFLORA. Nat. ord., *Malvaceæ*.—Native of Brazil. Stem upright, round, numerous branched. Leaves broadly ovate, acute, light green; veins prominent; margin slightly and irregularly notched; petiole short, with two linear lanceolate stipules at the base. Flowers small, with four cordate bracts, longer than either calyx or corolla, and quite inclosing both; red. Calyx divided into five short ovate segments; red. Corolla deeply divided into five cuneate segments; red, and somewhat membranous.

It is in the profusion of the flowers that the beauty of this plant rests. The old wood of the stem and branches is literally covered with the pretty little flowers at all seasons, the plant being irregular in its blooming season. It requires the treatment common to stove plants, and peat and loam, the latter predominating, are the compost in which it delights.—S. G. W., *Kew*.

LONDON MARKET GARDENS.—VINE PRUNING.—VEGETABLE MARROWS.—CABBAGES.

WHEN I said that there was a school out of London, in which so many of the best London market gardeners might learn "something to their advantage," or rather, before I said that, I made up my mind for an open field battle, never liking to fight within fences of any sort. To avert a battle, however, I suggested a way by which any of the generals commanding the forces about London could ascertain whether there were sufficient reasons for a battle at all. That way is down to the Stud House at Hampton Court, where "proofs" may be examined for or against the aggressor.

According to reports in the "Kingston Daily Tattler," our only independent source of local intelligence hereabouts, some of the members of Council have disbelieved my report, and sent down a few of the most able men in England, perhaps, as Commissioners, to inquire into that which I feared would bring on a horticultural civil war; and now I will suggest a second way of avoiding a conflict.

The head of the Commissioners happens to be on the right shoulders, and I happened to make his personal acquaintance at the end of last spring, and have seen him once since then, just twice in a lifetime. We, therefore, cannot be supposed to compromise the interests of those whose servants we are through personal considerations. The head Commissioner happens, also, to be

one of the, if not the very best public writer in England on those articles under dispute. Therefore, to spare blood and ink, I do hereby suggest that the report of the Commissioners, word for word as it was delivered to the Council in London, be sent to the Editor of *THE COTTAGE GARDENER*, and that he be requested to publish the same, that all may stand on the same footing by hearing both sides of the question; and that there may be no mistake, I give the name and address of the head Commissioner, Mr. W. Forsyth, F.H.S., gardener to Baron Rothschild, Gunnersbury Park, Ealing, Middlesex. I am persuaded that no reader of *THE COTTAGE GARDENER* will ever regret having read Mr. Forsyth's report. No one need be more jealous of his p's and q's than I am; but, at the risk of every word of the report being against me I want it produced, because I know it must be founded on sound practical reasoning, for which the head Commissioner is well noted, and therefore will be of much practical value to country readers who may think that London and Londoners are "everything."

With respect to the question as to the theory and practice of Vine pruning being at variance (see page 392), I am told already that I may be considered by some people as leaning to one side of the question unless I take all the shoots and bunches to the Meeting of the Horticultural Society. No. 4, which is fifty-two joints long before the bunch, I intended to keep, and take the bunch only, and this is, or might be, called a one-sided proceeding; but I have no wish except for clearing up the truth as far as the experiment goes, and I should not feel satisfied if a loop hole was left for the advocate of practice against theory, or of theory as opposed to practice, to creep out at; therefore, at a great sacrifice to my Vine, I shall cut last year's shoot, and take to the Meeting the four spurs, perhaps five, all growing on the parent branch, and with the bunches attached.

I had several answers before the notice appeared in *THE COTTAGE GARDENER*. Three good practical gardeners have given their opinion in favour of No. 2, or the shoot stopped two joints before the bunch; and one nurseryman, who takes prizes at all the London exhibitions, says decidedly that No. 4 ought to be the best. Now, the spur of that number was not stopped till the beginning of September, and at the fifty-second joint. The Grape is the *Esperione*. It has been suggested, also, that we should have the reasons for the different answers, to which there is no objection; indeed, it would be more satisfactory that way if the writer allowed or wished his name to be given; but then the trouble of going into the reasoning or theory might deter some of the best judges from answering the simple question "this" or "that." Any Grape grower may send in his answer addressed to me at "Surbiton, near London," which is enough for the post office.

A third subject which is forced on my attention this week is of universal interest, or rather, universal use, and, unless I mention it thus early, it may cause some bother by and by. The Horticultural Society of London has proved this season which of all the *Vegetable Marrows* is the best for use while in the young state. I saw it in the Chiswick Garden last August, and I recognised it as a kind which I had cultivated many years as "the best kind." I gave seeds of it to many gardeners, and recommended it to others. When I came to Surbiton in 1851 I took three specimens of it with me, two of which I broke up to give away the seeds, and the third I gave to a grocer here, who hung it up in his window as a curiosity. I do not grow this kind of "fruit," owing to want of room, nor have I any seeds of it left on hand. Sir W. Middleton used to be fond of it, and while it could be supplied no other kind of "Marrow" would he allow at table. Sir William received the seeds of it from Dr. Beck, of

Ipswich, the best grower and the best authority in Suffolk on Marrows, Squashes, and best kinds of Melons, and I think Dr. Beck once told me that this kind was much used in Languedoc, or somewhere thereabouts, in France. He would add to many other favours if he were to send us a full and particular account of it, and how they cook it in France and in Ipswich. At all events my hands are clean of it now, and my plate too, the worse luck, for I was very fond of it when well cooked. When I was man cook the best way to cook any kind of Marrow was like the best way of cooking Potatoes, namely, in their "jackets;" we would never cut or quarter them till they were "done" or boiled soft. Then put them on a plate, and cut each in two, scoop out the core, if any, and mash the fleshy parts only, just like mashing Potatoes into a perfect custard-like dish, which could then be flavoured or sauced to one's liking.

Talking about the Horticultural, I never told that they, of all the Londoners, have the most useful *Cabbage* for private use. I never use any other Cabbage; but, not liking to mix them up with flowers and bedding plants, I seldom have an opportunity in the Cabbage way. This is a very dwarf kind from Germany I think, which cabbages, or "hearts," as hard as a bullet, and is then just as tender and as delicate in flavour as our best April early kinds. The name has never got into our seed-lists, and I am not quite sure of the spelling, but I think it is *Jaunette*. Three years since the Society did not have any of it over; and, if you believe me, the people hereabouts to whom I had given plants of it were well nigh running out my patience about it. The same at our rectory; and the gardener there, Mr. Jones, told me that "so and so" of our neighbours failed this season to hunt it out in Paris. Fearing a dearth of it, and not knowing if the Society would continue introducing it, I took to the good old plan of making sure of it by cuttings like the scarlet Geraniums. I plant the young sprouts at eighteen inches row from row, and fifteen inches apart in the row; but I suppose the plants from the cuttings may be put in at fifteen inches every way. Every one ought to have a few rows of it, especially for autumn use, on account of its mildness.

D. BEATON.

GRAPES GROWN UNDER PECULIAR CIRCUMSTANCES.

WHEN we meet with anything growing under circumstances differing widely from our preconceived notions of what it ought to do we are led to pause and inquire whether our own ideas may not have been erroneous, and consequently we begin to retrace our steps, and take a more accurate view of the matter—endeavour to find out the cause whereby a result was obtained by going to work in two ways so diametrically opposite to each other. I confess being placed in this position a short time ago, and have not yet satisfied myself as to the cause of the inconsistencies of the case in hand, which was one bearing on one of the most important departments of gardening, and one which, above all others, has had most attention; I mean Grape growing.

Having paid a visit some time ago to the Manchester Art Treasures Exhibition, I took advantage of the opportunity, and visited some of the excellent gardens in Lancashire and adjoining counties. I saw many things to admire—good Peach trees at one place, good Pines at another, a well-managed flower garden at a third, and good Grapes mostly at all; but these things, being all produced by the ordinary way I had been accustomed to look at as being the valid one, had less interest with me than some Grapes I saw growing at a market gardener's near Manchester, under circum-

stances so widely different from those in which we generally see them that I make no apology for describing what appeared to me a "mystery."

The place I allude to was of unpretending appearance—a number of low glass houses, some lean-to, others span-roofed, clustered together on a very slightly elevated position in a flat neighbourhood bordering the river Mersey. Some ground under ordinary market gardening bore crops around those houses, and the adjoining fields were grass. Some of the houses had been forced early, and, having ripened their crops, were in a state of rest prior to being pruned for work another year. Other houses had excellent, and, I may add, heavy crops of fruit on them just fit for the table. Others had Grapes scarcely ripe, but promising well, the kinds grown being *Black Hamburgs* and *White Muscats*. A span-roofed house had a crop of the latter, not then (the 20th of August) quite ripe, certainly the heaviest I ever saw. The gardener, Mr. Summers, told me he calculated there would be about 7 cwt. of fruit in it, though the house was not unusually large, and they all promised well. Certainly I have seen larger bunches where a Vine has been thinned very much to obtain a large growth; but these under notice were all good, and, as I say, were an exceedingly heavy crop.

Now, I suppose my readers will be saying that all this is common-place, and I admit it is so far; but the circumstances under which they were grown were certainly out of the usual way. The situation of the place, as I have just said, was on a slight eminence in a level country near the river Mersey and its tributary streams; and some heavy rains on the 13th and 14th of August had so swelled these streams that they overflowed their banks and laid the neighbouring lands all under water, completely surrounding the cluster of forcing houses of the place I speak of, putting out all the fires, and reaching to within about two feet of the top of the Vine border. This flood, of course, subsided in about a week, leaving the usual disagreeable smell behind. Such floods are unusual in August, but are common enough in winter, and I was told that for two months one season the ground was covered continually with water, preventing any of the fires from acting, and that during that time *Muscat Grapes* were exhibited from them at one of the London shows which carried off the first prize.

This is an extreme case; but the advocates for deep borders, deep drainage, &c., must in this instance see the inutility of their plans; for here we have the best *Muscat Grapes*, or as good as any need be, grown in a house where at times no fire can be put on for weeks together, and the border all but immersed in water; for, as I say, the highest portion of it was barely two feet above water mark, and the quantity that surrounded it was hundreds of acres.

Such a state of things, I confess, puzzled me, as I had been led to expect that dryness formed one of the necessary qualifications for keeping Grapes or any other fruit, and I hardly expected to see such perfection where the plant was treated more as an aquatic than one inhabiting dry, upland situations. I accordingly made some further inquiries of the formation of the border and other matters, which I must say were frankly and freely answered, and every information given; but I find the subject is too long for one notice. I must therefore defer the remainder until another week.

J. ROBSON.

HONEY HARVEST.

I AM glad to see that your correspondent, Mr. Wighton, has called attention to the too frequent assertions made of large harvests of honey obtainable from particular hives. I do not mean that the authors always intend wilful de-

ception, but it is seldom remembered that the *kind of hive* abstractedly, has very little to do with the collection of stores, and this fact cannot be too often pointed out to those on the look out for mere novelty. Mr. Golding especially cautions the readers of his work against any such expectations, as also does Mr. Taylor. I am the more led into this train of thought from having seen not many weeks since, in a weekly paper, the revival of a statement originally put forth by the late Mr. Nutt, as an inducement to purchase his hives, of marvellous honey harvests to be obtained from them, and which the correspondent of the said paper seems actually to have believed. Another correspondent, however, immediately afterwards exposed the monstrous fiction in its true colours. In order to let the novice see to what lengths credulity is expected to go it will be well to extract from Nutt's book his own words as follows:—

"Summary of the several deprivations or takings of honey from one set of boxes this season, 1826:—

	lbs.
" May 27th, glass and box	54
June 9th, box.....	56
" 10th, glass	14½
" 12th, "	60
" 13th, "	52
" " collateral box	60
Total.....	296½."

In commenting upon this tale of wonder Dr. Dunbar says that Nutt declared "he left 109 lbs. of honey behind for the bees!" Dr. Bevan, likewise, in speaking of the same subject, adds of Nutt, "I am informed that in his lecture delivered at Maidstone in 1834 he asserted that from ten families during the current year he obtained 918 lbs. of honey; nay, more, that the stocks still weighed 900 lbs.!"—(See "Honey Bee.")

It is not meant, of course, to be implied that all hives are alike in point of utility or convenience, and certain rules as to capacity are needful according to circumstances; but I would wish to caution the bee-keeper against being misled by the fallacy of expecting that a family will store more or better honey as influenced by the mode of construction of their dwelling. To use Mr. Golding's words, "Let my readers repel the quackery which would have them believe that it was the *kind of hive* that commanded the honeyed store. No, that will be ruled by the season and locality, and these vary greatly."—AN OLD APIARIAN.

FLOWERS BLOOMING OUT OF DOORS THIS SUMMER.

THIS has been such a wonderful year for flowers that I think you ought to get your readers to send you lists of unusual plants that have been noticed by them in flower. It might be an interesting record, and, as a beginning, I send you the following small list of hardy plants which have flowered in my garden at Bitton, Gloucestershire, this year, and which, though mostly old plants, have either never flowered before or very sparingly:—

- Snake's-head Iris.
 - Acacia julibrissin.
 - Bignonia capreolata.
 - Aralia spinosa or racemosa (I do not know which).
 - Hydrangea quercifolia.
 - Pomegranate, profusely; the double variegated-flowered sort.
 - Hemerocallis or Funkia alba, a most beautiful white flower, which I do not see in THE COTTAGE GARDENER'S DICTIONARY.
 - Köelreuteria paniculata.
 - Double white Hibiscus, a lovely shrub, which in previous years had rarely perfected its flowers, but this year is a mass of fine bloom.
- I hope some more of your readers will send you lists.—H. N. E.
- [We shall be much obliged by similar lists being sent to us.—ED. C. G.]

ONCIDIUM LURIDUM; *atratum*.

COLLECTED by Hartweg for the Horticultural Society at Tampico.

Whether or not *O. luridum* is really a mere variety of the Carthagenæ Oncid becomes more and more doubtful as our knowledge of such plants extends. In the present instance it is unnecessary to open that question, the plant now mentioned being undoubtedly a very fine form of the lurid Oncid, whatever the relation of the latter to the Carthagenæ Oncid may finally prove to be. With the habit of the common form of the species this combines flowers smaller than usual, very flat, with olive and rose-coloured sepals and petals, and a rich crimson lip, furnished at the base with five purple-black tubercles, four of which surround the fifth; of these tubercles the central and two anterior are oblong and simple, the two posterior are concave, or almost kidney-shaped with the concavity backwards. The wings of the column are oblong truncated fleshy bodies attached by the narrowest end. It is a fine variety, in some respects like the purple-lipped Oncid (*O. hæmatochilum*), and requiring the same treatment as *O. luridum* itself.—(*Horticultural Society's Journal*.)



ON FLOWER PEGS.

By A. FORSYTH, C.M.H.S.

In some branches of horticulture the rudest materials are still used, and appliances of a primitive character resorted to, as if gardening with us were only as yet in its infancy. Surely the finishing stroke to a bed of flowers is the pegging down or tying up of the branches, so as to show off the bed as a whole to the greatest possible advantage.

Passing over the subject of flower-sticks, I shall confine myself to pegging and peg making. In the ordinary arrangements of nature we find all flowers more or less elevated; at all events this is the rule, and flowers prostrate either on the earth or on the water are the exceptions to this rule; it is therefore an unnatural practice to bind them to the earth; most plants, too, have an upward tendency, consequently bending down is apt to break them. For these reasons, therefore, I find it desirable to employ a prop to hold the flower up from the earth in addition to the hooked stick to keep it down. This appliance will be understood by a glance at the accompanying woodcuts, being neither more nor less than a forked stick, such as is used on a large scale to support the limbs of Apple trees when heavily laden. The fork for propping up small plants is made of the same material as that used for the hooked peg of horticulture, namely, the fronds of the common Fern (*Pteris aquilina*); only in the props the shank or stem runs downward, whilst in the hooked peg the shank runs upward in regard to the frond from which they are cut. Although I am anxious to introduce a better and a cheaper article than fern timber for this purpose, I prefer stating the case in this homely way in order that certain old-fashioned parties may try the experiment, and likewise that by contrasting the two systems all sorts of readers may comprehend more clearly the drift of my argument, which is that props and pegs manufactured by experienced hands can be rendered less clumsy and less expensive than those formed by the clasp-knife of the labouring man.

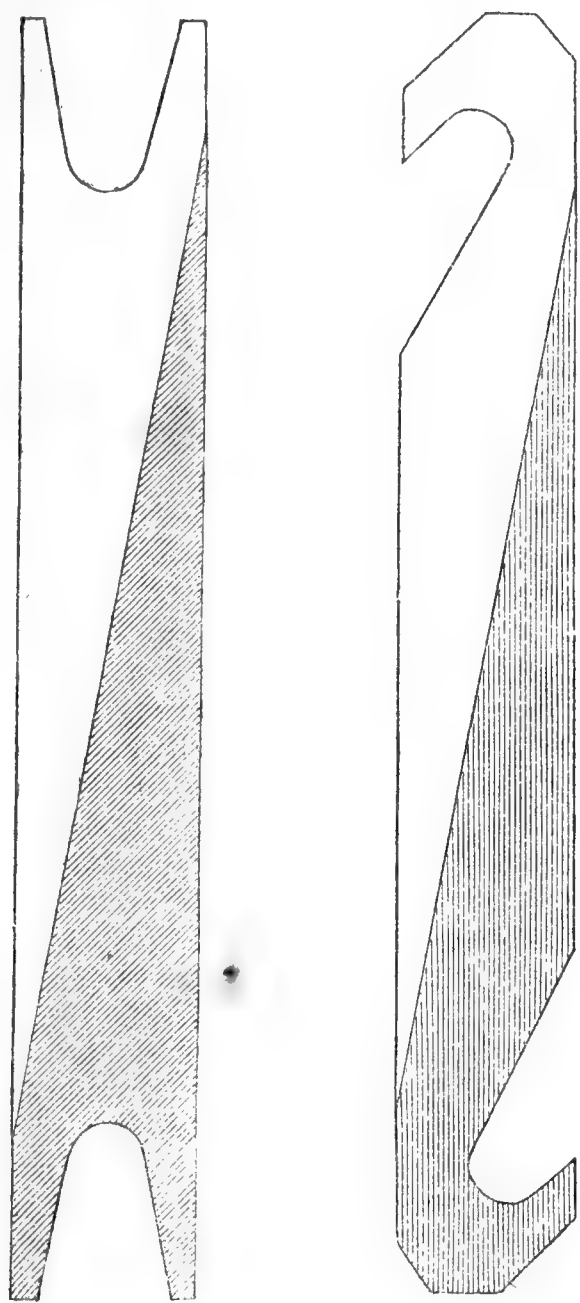
It is impossible to make hooked pegs out of the fronds of

fern without having the small end tapering to the earth; so that, however hard it may be to thrust them in, it is not hard to pull them out, especially if they are put in perpendicularly to the earth's surface as they generally are, whereas if put in slanting the weight of earth would help to keep them firm; but all pegs made of green materials naturally shrink in drying, and consequently get loose. In addition to the fern frond pegs above alluded to, there are wooden ones made from the spray of birch, &c.; indeed, the uses of a birch besom about London may be stated thus,—first it is employed to sweep the lawn, secondly to peg the flower-beds, and lastly, to light the hothouse fires.

Iron hair pins are used as pegs for plants, and are both neat and cheap, and when made sufficiently large answer for some plants, but still they are liable to corrosion and other faults. The wooden loop of deal or willow, of the same shape as the hair pin and of the strength of a lucifer match, answers very well, but it is subject to very clumsy mishaps in unpractised hands; nevertheless this loop as well as the hair pin has always a leg too many to be neat, since any article that could do its work with one support is preferable to one requiring two, and the very character of these pegs and loops necessarily limits them to the small size of pegs.

When a shoemaker wants pegs to tack heel pieces together, it is quite astonishing to see how cleverly he cuts them out; sections of a beech branch are sawed from half an inch to an inch in thickness and five or six inches in diameter, these are cleft into pieces of the size and shape of a gentleman's dressing-comb, and these combs are again cleft, as it were, tooth by tooth, and thus the pegs are formed. Now, if a labouring man were set to work at six o'clock in the morning to make pegs, and were told that every one must be wedge-shaped and pointed, and that he had to make 30,000 before night, he would certainly think it a very unreasonable demand, whereas the shoemaker would accomplish the task in the ten hours and have time to spare.

Now, if the shoemaker's pegs were of larger dimensions, and a saw draught made in the combs, so that the section should be a hooked peg instead of a wedge, and the combs cleft as before with a strong knife, we should have many thousands of neat pegs fit for Verbenas and other trailing plants cut in the course of a wet day, and that, too, with no other tools than the common garden pruning saw and the sheath knife. Although this homely plan is not the best, I could not omit mentioning it, since some may try this cheap and ready method who do not require any great amount of pegs or any of the larger sizes. It is always difficult to get pegs just of the right size required; for the strength or delicacy of the shoot to be secured determines their length and strength, and hence the necessity for a perfect control of the sizes of the pegs and forks. Hundreds of plants would be benefited by being trained near the earth if proper



pegs could be had cheap; witness the Gooseberry fanciers training the cherished shoots near the earth, and wide apart from one another, by means of hooks and props, and I have seen this adopted by gardeners to get large fruit, as at Bicton by Mr. Barnes, and surely no kind of trellis could be so cheaply or so readily put down or taken up as a bundle of tent hooks and forked pegs. In putting down these, the hooked peg must always be placed outermost, and the fork between that and the root; for if this order is reversed, the shoot in turning up to the light, which it always will do, leaves the prop loose, whereas the hook being outermost becomes tighter by the upward growth of the plant. Many of our most showy plants are greatly improved in appearance by having their long naked stems hid, and their flowers brought forward by means of training; but on the other hand they look broken down if the flowers are pegged to the earth.

The accompanying woodcut will show the way in which one peg is sawn out of another without waste, and another method where the hook hole is punched, or rather, pinched, with pincers such as railway ticket-takers use, and shoemakers have, and how the remainder of the thin label or veneer is shaped into pegs by a few cuts of the shears. The stronger pegs are made by sawing and boring according to the lines shown on the section.

That pegs will be made by machinery of fair proportions and marvellously cheap there cannot be a doubt, but this is not the place, and gardeners are not the people to inquire into the working of steam engines and circular saws for cutting wood into veneers. I have made the articles here described of various sizes, and that with a few inexpensive tools,—indeed, with little else than a saw.

Pegs thus made of seasoned wood are very superior to those in common use, since they admit of hammering to fasten them, and when they are inserted the damp earth gets firmer by the swelling of their tissue. In order to arrive at the true character of these pegs we must take the actual dimensions, and see how many can be cut out of a solid foot of timber.

When the smaller sizes are wanted, and the thickness of veneering is sufficiently broad to cut them from, a piece of wood four inches long by one inch broad, and half an inch thick, will give ten pegs at each end, or twenty in all out of two solid inches of wood, thus furnishing 17,000 and odd out of a solid foot of timber; and these slender pegs would then be quite as strong as the well-known "Menographs," or wooden labels for plants, manufactured by Messrs. Lingham of Birmingham; and even when the pegs are made of large dimensions, ten inches long, half an inch broad, and a quarter of an inch thick, the enormous number of two thousand and odd can be cut from one cubic foot of timber, the full value of which would be from 6d. to 2s. 6d., according to circumstances, but the average of 1s. or 1s. 3d. would be a fair estimate of the cost per foot for materials. Contrast this with a couple of thousand of hooked sticks ten inches long, cut from the spray or branches of trees, of sufficient strength to admit of being hammered in driving; instead of packing them into the compass of a cubic foot, I find they would fill the body of a cart—being forty-six faggots, ten inches by nine inches, or about twenty-seven cubic feet, and nearly two cwt.

The training of a wall tree could not be effected by means of shreds pulling all one way, but it is accomplished readily by pulling the branches right and left, and thus any distance or direction is secured to the bearing wood. Now, suppose a plant trained to the face of the earth instead of to the face of a wall, there is wanted the left-hand power to keep the shoot away from the earth, as well as the right-hand power to keep it to the earth; and it is here that the forked prop is required, without which the system of level training, which I am advocating, is impracticable.

By far the most beautiful flower-bed I ever saw was a crescent of Moss Roses, pegged down near the earth upon moss, so that the flowers rose upright upon their own foot-stalks, and the foliage had just room enough to fall without trailing upon the ground.

By means of pegs and props hundreds of rambling plants might be trained or led where we please, that otherwise would get entangled, and would not behave themselves either upon the earth or tied to a stake in the air. Nearly half the summer labour of some flower gardens is the propping and tying of the flowers; and go where you may in the flowery days of summer, you find gardening folks with sticks in their hands, and strands of matting in their teeth to tie the flowers with. The system of propping here detailed will at least support one-half of all the hardy ornamental plants requiring props, and that at a cost of fifty per cent. less than is now required to do them. The foliage of plants, instead of being bundled up in faggots to sticks, should be exposed to sun and air, and this can only be done with an amazing—I had almost said unreasonable—number of ties; it is therefore necessary, in developing this plan, to cheapen the props before using them so extravagantly, for it must come to this at last, that every flower-head shall have a place to itself, and by raising it higher or lower according to circumstances, great beauty and variety will be produced.

Besides bedding plants that are usually pegged, and rambling plants that require tall sticks, there are things that want raising to form a semi-globe, whose natural habits are too flat to show them to advantage in certain positions, and there are few flower borders that have not a particular point of sight to be viewed from, so that sheets of bloom have to be created by pegging or tying the flower-heads forward, where the habit of the plant is to produce only awkward clusters of flower-stalks, half of which would be hid by the

other half, and the hint given by the Lancashire Gooseberry growers need not be disregarded in floriculture:—He would rarely succeed in getting a prize fruit who did not train his Gooseberry bush. I could enumerate hundreds of highly ornamental plants that cannot be grown in ordinary gardens for want of a trellis to support their vines. Here, then, is a cheap and ready way of training and keeping them trim by sticking them as they advance; and as for tall plants, they seem to be almost discarded from cultivation, for, unless they have a stem like a Hollyhock, they are rejected on account of the trouble they would cause. It is quite disgraceful to see how few varieties of flowers flower-gardening people grow; it is time to alter this, and to give those slender-stemmed and elegant plants a place whose vines are not furnished with tendrils to climb, and whose beautiful heads of flower it would ill become such to make the earth their pillow.—(*Horticultural Society's Journal*.)

ANSWERS TO VARIOUS QUESTIONS.

THINNING CAMELLIA BUDS.—"I have a few plants of Camellias set with flowering buds, several of them double buds: should they be left on the plant? If not, when is a proper time to reduce them to one bud on each branch, or would the two come to perfection if left, and to be given once a week a little liquid manure."—If there are only two buds on the point of a shoot it would be a pity to remove either of them, as they may bloom both at once, or in succession to each other, without at all injuring one another, unless very closely jammed together; for in that case, if both swelled at once, they would abut against each other, and very probably both or one would be pushed from its base and fall. Thinning is generally attended to when there is a cluster of buds formed, and so close together that there is not room for them to swell freely. When that is the case the sooner thinning is resorted to the better, picking out the smallest buds with the point of a penknife, and leaving from two to four, or more, according as they can be allowed sufficient space between each other to swell freely. For want of this thinning, and thus giving room, many Camellia buds are pushed off by one another when they swell. Let the manure water be clear and weak, and see that the drainage is all right, and do not let the plants have any sudden check.

BRUGMANSIA KNIGHTII.—"I have a good plant of the double white Brugmansia. Will it live in the greenhouse in winter? Will the leaves fall off then like the old single kind?"—I consider that this large-flowering double white is quite as hardy, and even more free-flowering than the single white. The losing or not losing the leaves in winter depends on the temperature and light it receives then. I have had both blooming freely in late autumn and early spring. In the dead of the winter, unless the house is kept dry, the large flowers do not open freely, and are apt to be injured by damp. In a medium house between a greenhouse and plant stove I have had this double variety flowering almost continuously, every fresh inch of growth being attended with its fresh flower-buds; but when thus blooming continuously they seldom present such a mass as when allowed a period of rest, and then encouraged to grow freely. Hence, to flower them well in summer and autumn, the shoots of this season should be well ripened and hardened, the plants kept dryish and coolish in winter—from 35° to 40°—when the leaves will all fall; and then, when the shoots are pruned back in spring, each bud left will produce a shoot that will bear abundance of flowers. When thus leafless I have kept these plants in winter in a close shed, covered over with hay in severe weather; but a cool greenhouse would be a better place, and, when thus rested, after ripening by plenty of light and little water, they will bloom more profusely than when allowed to grow freely all the

winter. When grown in pots strong loam and rotten dung, or loam and frequent manure waterings when growing, answer best, as the loam helps to keep the shoots short-jointed. If our correspondent keeps his plant nicely over the winter I would advise him to harden it off in the month of April and the first part of May, and then either plant it out of doors or plunge the large pot to which it has been transferred, and mulch the top with rotten dung. Some time ago I recommended in certain cases the introduction of large plants in the centre of our grouped beds, as practised by my friend Mr. Gardiner, at Courteen Hall, as tending to relieve the level monotony. In the centre of a bed forming part of a group so managed, the bed being filled with Rollisson's *Crimson Unique* Pelargonium, is a standard plant of this double Brugmansia, from five to six feet in height, and the head about three feet in diameter, that has been a splendid object since the second week in July. I have several times counted from fifty to sixty of its large drooping flowers fully expanded at one time. The bare stem is covered by strong plants of the Unique, the bed sloping from the centre to the two ends. The plant is, for its size, quite as prolific in flowers this year as last, though plunged in its pot; but last year it grew more vigorously, and made a much larger head, owing to its being planted out. Hundreds have stood round this plant to admire its gracefulness and inhale its fragrance. Last year, as soon as the first frosts had injured the points of its shoots, it was taken up, repotted, watered, part of the head pruned away, shaded for a few days, and then exposed to as much sun as possible under glass, with no more water to speak of, so as to harden the shoots; and then, with Fuchsias, &c., it was merely kept from frost and dryish all the winter. Small side-shoots, three inches or so in length, with the larger leaves removed, strike freely in a little heat in spring, and, before planting out a fine plant, it would be advisable to secure a stock. The *lutea* and *atro-sanguinea* may be treated much the same way, and, planted out, they make fine ornaments either out of doors or in a conservatory.

CASSIA CORYMBOSA.—One correspondent says, "I have noticed your recommendation of this plant for greenhouses and out-of-door decoration in summer; but is there not some mistake about it, as you describe it as orange, whilst all the books speak of it as a yellow-flowered tender evergreen, from Buenos Ayres, requiring stove treatment?" Another asks, "Would not the *Cassia corymbosa* make a good bedding plant for a large bed?"—I do not think there can be any doubt at all as to the species, though the orange is deeper in the open air than when stowed up under glass and in a high temperature. Many plants from the tropics would be quite at home in our climate from June to the middle of October, and thanks should be given to those who try and make experiments in this direction. I do not suppose that small, succulent, young plants, newly potted off, would do much good in a cool greenhouse in winter; but old, well-established plants would be quite safe there, though, as a matter of course, from want of heat, they would lose their evergreen character, and become deciduous. I have never used it for a bed as yet, though I have no doubt it would answer well, especially if the bed was large, and rings of blue, red, and white surrounded it. For a smallish bed by itself it would require to be pegged down as you might do with a bed of Roses, the flowering shoots being produced this year from the buds of well-ripened shoots made last year. I saw a plant so layered or pegged down doing well on a mixed border at Stockwood the other day. When I get enough of it I shall be tempted to make it a component part of a ribbon border. I hardly know of anything richer for a high row. At present I have used it chiefly as the centre of beds.

There are two plants near the *Brugmansia*, each from five to six feet in height, blunt, pyramidal in shape, and the base as broad as the height, a mass of bloom for three months. Every half inch or so in growth presents you with a fresh spike of bloom, so that whilst the first decays and drops there are plenty more coming. I have also used it as the centre of two circular raised beds surrounded with Ivy, that the ladies have been pleased to name "twelfth cakes," and, from being allowed to grow very loosely, height, airiness, and a rich colour are thus given to the centre of the beds. I hope I shall not be considered egotistical if I just state how simply these beds have been filled. Centre, *Cassia corymbosa*; round it a ring of *Salvia patens*, and then a ring of *Ageratum Mexicanum*, allowed to mix a little; then a ring of *Scarlet Defiance Pelargonium*; and, for want of plants to make it double, the second row was *Trentham Gem*; outside of the scarlets a ring of the Silver-frosted plant (*Cineraria maritima*); and between that and the raised sides of Ivy strong plants of the *Golden Chain Geranium* as the outside row. I first saw the *Cassia* used out of doors at Courteen Hall some years ago. It is best propagated by slipping off small side-shoots in spring, and when about three inches long after fresh growth has commenced, inserting them in sandy soil under a bellglass, giving a little bottom heat, and admitting a little air at night to prevent damping. The plants, when taken up and housed in the greenhouse, will retain their flowers for months after the leaves have dropped. They require very little more heat after that to keep them safe than a deciduous *Fuchsia*; but, like them, when thus resting, the soil should be dryish instead of wet, though not dust dry.

CLETHRA ARBOREA.—"A good plant produced a cluster of good flowers, and now there are berries of a whitish colour. May I expect seed, and will they ripen in the greenhouse?"—We have no doubt at all of the seeds ripening if the house has plenty of light. The plant never blooms much earlier than August and September, and is closely allied to *Arbutus* and *Gaultheria*. It is comparatively hardy as a greenhouse plant, being a native of Madeira. If you wish a great many young plants wash out the seeds, and sow them in a hotbed in spring. For practical purposes, however, that is, the possession of nice stubby plants, those raised from cuttings will be more manageable and bloom earlier.

SPARMANNIA AFRICANA.—"When I was a boy I used to admire this plant, with its bunches of white flowers, and the masses of purplish stamens within, and, though the foliage was a little rough, its light green presented such a contrast to those with dark green foliage. I never see it now. Where can it be got? Is it difficult to grow?"—The plant is very easily grown. Merely as a contrasting plant it is interesting. The last time I saw it was in the beautiful conservatory at Shrubland, and I felt pleased that even in such a place old plants are not turned out of sight for new. It is easily grown in loam with a little peat, and will be quite safe in winter in a temperature ranging from 35° to 45°, averaging 38° to 40°. It is easily propagated by cuttings, and to keep it in something like bounds the knife should be used pretty freely. Any London nurseryman could supply it I presume, though now it is considered old and rough looking.

ABUTILON STRIATUM.—"A friend gave me a nice plant of this beautiful plant, and recommended it as a good weeping standard. How shall I treat it? It is nearly four feet high, but very slim, and the stem bends."—Put a neat stake to the stem, and support it its full length. About November pinch out the terminal bud, and keep the plant dryish, and in an average temperature of 40° during the winter. About March the strength of the sun will cause vegetation to commence freely, and

then, as soon as they swell, pick out all the buds along the stem except from four to six at the point. These will shoot out as many branches, and when long enough should be gently hasped by their middle to the stake, which will give the shoots a semi-pendulous character. Next season prune these shoots back to several buds each, and the head will be formed, and very pretty it will look. In warm southern counties it would do out of doors in summer, and would be as great a relief among Tea Roses as I am told the standard Honeysuckles are at the Louvre and Versailles. In growing mix a little peat with the soil at first; but as the plants get established use fibry loam and a little rotten dung.

SHRUBBY CALCEOLARIAS NOT ROOTING.—"I had a great basket of yellow and dark coloured ones sent me in the middle of August; but, though I cut them up, planted them in a close place, and gave most of them a little bottom heat too, few are healthy and likely to strike, and most of them are gone."—The less heat for shrubby Calceolarias in autumn the better they will do. You commenced also too early. From the last half of September to the third week in October I consider the best period for this purpose, and nothing suits them better than light sandy soil under a frame of glass with its back to the south, or under a close handlight, shaded a little at first. When you get cuttings sent you, you must take the pieces as your friends choose to send them, though, as in your case, much of the bulk would be too soft or spongy to strike well with either heat or cold. When you can select your cuttings wait until, by examining your plants, you can find nice stubby side-shoots from two to three inches long. Slip these off with a sharp knife close to the older stem; dress away a portion of the lower leaves, and reduce the size of the upper ones if very large; insert firmly as mentioned above; water well at first, and merely dew when necessary afterwards; shade when the sun shines very brightly; above all, keep close and cool, and you may calculate on losing something like one per cent.

R. FISH.

NOTES FOR OCTOBER.

THE rapid growth that vegetation has made after the late fine rains will demand attention in hoeing, forking, and surface stirring amongst the crops of *Winter Greens*, *Savoy*s, *Brussels Sprouts*, *Cabbages*, &c.

A good breadth of *Early York Cabbages* to be planted out in well-dunged ground for cutting in May and June. *Cauliflower* and *Lettuce* plants to be pricked out into some good light soil, in a sheltered convenient place for protecting them in winter. Cauliflower plants potted one in a five-inch pot, protected in a cold frame or pit during the winter, will turn out of their pots with a ball of roots in spring, and succeed admirably.

The *Apples* and *Onions* that have been stored away to be examined, and any that are beginning to decay to be removed for immediate use. *Carrots* and *Beet* to be stored in sand. *Parsnips* keep best when left in the ground until a severe frost sets in, when some may be taken up and stored away for use during the frost. The August-sown *Cabbage* plants to be pricked out, if not already done, into beds to stand the winter.

If attention had been given, as recommended in former notes, to the summer management of *fruit trees*, the remarkably fine summer and autumn weather that we have had for the maturation of the wood would obviate the necessity of further instructions; but when such attentions had been neglected, or in undrained or unfavourable situations, every facility must now be given to the ripening of the young wood by free exposure to the sun. The outdoor *Vines* should now be looked over, the laterals removed, and if two or three top joints of the shoots are green or unripe to be pruned off. The shoots of *Peach* and *Nectarine* trees that have borne fruit, but have not a leading wood-bud, may be now cut out, for the advantage of more light and air to ripen the remaining wood.

However reluctant you may be to disturb the waning beauty of the flower garden, if you intend to preserve some of your *Tom Thumb* or other *Geraniums*, the sooner they are now taken up the better. Avoid the use of the knife, unless to cut back long straggling branches. When potted to be placed under glass, carefully watered, syringed once a day, and shaded from sun for a short time until they have made fresh roots, when air may be admitted freely until the approach of frost, when they should be stowed away in their winter quarters. Early advantage should be taken of the present very favourable weather, and while the ground is in such fine working condition, to get in the spring-flowering hardy bulbs, such as *Tulips*—to be planted in beds six inches apart every way—*Hyacinths*, *Narcissuses*, *Snowdrops*, *Crocuses*, *Fritillarias*, *Jonquils*, *Crown Imperials*, *Dog's-tooth Violets*, &c.; also *Primroses*, *Polyanthuses*, *Iberises*, &c., to impart a cheerful appearance during the winter months, and to produce in beds, or masses in the borders, a gay effect in spring.

Advantage should also be taken of favourable weather at this season of the year for performing any *new ground work*, or any improvements that may be intended. Towards the end of the month ornamental shrubs, whether evergreen or deciduous, may be removed without the smallest doubt of success if the ground is properly prepared and drained if in want of it.

Auriculas, *Carnations*, *Picotees*, *Pansies*, &c., that are growing in pots to be removed to their winter quarters—a cold, dry frame; but very little water to be given during the winter, and all the air possible in favourable weather. Such plants will bear a low degree of temperature without injury; but being in pots, where the roots are more exposed to injuries from frost, they require protection in the most severe part of the winter. *Dahlias*, as soon as their beauty is partly destroyed by frost, to be taken up early in the morning when the weather is fine, to be left exposed to the open air until towards evening, when the heads or stems should be cut off about eight or ten inches from the crown, to be placed in a situation to be thoroughly dried before they are placed in their winter quarters.

If the fine autumn weather, so favourable for ripening the wood of plants out of doors, has induced you to postpone housing your greenhouse plants, no time should now be lost to get them staged in their winter quarters; and if the favourable weather continues some short time longer, free circulation of air should be admitted by drawing off the lights, and by exposing the plants to the beneficial influence of dewy nights, but to watch carefully every evening for that peculiarly murky atmosphere denoting the near approach of a frost that is frequently very sharp the first night, and most destructive to plants, although not always clearly perceptible, unless to the experienced eye. The plants that may only appear slightly damaged now will get worse and worse as the dull days of winter increase, until at last they are consigned to the rot-heap.

A system of arrangement in *staging the plants* should be adopted, that the hard-wooded plants may enjoy a fair share of light and air, but not exposed to cold currents; all luxuriant branches to be stopped to maintain a symmetrical and regular balance of growth; such plants to be syringed every fine morning, and air to be given both night and day while the weather continues favourable. The *Cinerarias*, *Chinese Primroses*, and *Mignonette*, &c., to be placed near the glass; *Camelias* and *Pelargoniums* in the most favourable situation for light, air, and warmth; and *Hydrangeas* and *Fuchsias*, &c., in any out-of-the-way place for the present. When plants require water it should be given before noon, that all superfluous dampness may be dried up by evening.

The winter stock of bedding-out plants that are well established in store pots should now be arranged and placed in their winter quarters as near to the glass as possible, where they will have sunlight and air to impart to them a dwarf and robust habit. *Mildew*, wherever it appears, to be kept down by the application of sulphur, and the green fly by tobacco smoke. As a great portion of the success in plant growing depends upon the proper preparation of the compost, it is now advisable to collect or to procure the principal soils and manures, viz., good turfy loam, to be stacked in the compost-yard cone-shaped to throw off heavy rains; also leaves for leaf mould. The heaps of peat and sand to be

kept under cover. Animal manures—sheep, cow, and horse dung, &c.—to be preserved under cover, and are generally kept for twelve months before they are fit for use.

WILLIAM KEANE.

WARDER'S METHOD OF BEE-KEEPING.

In an article at page 382 Mr. Wighton accuses Mr. Robson and my old favourite, Dr. Warder, of making erroneous statements regarding bee produce. Mr. Robson, doubtless, is able to defend himself, being a living actuality; but the doctor, being dead and resolved into the elements, needs an attorney.

So far from Dr. Warder making "false statements," having "strange notions," or using "collateral boxes," I maintain against all comers that he was by far the most truthful, trustworthy, and intelligent of all the older writers on the subject. So far from advocating that most unsatisfactory system termed the collateral, it is never mentioned throughout his work.

I am in the habit of making a short abstract of the contents of all my old bee books; and I have some whose titles even have not appeared in Cotton's or any other list. In order to show what Warder's method really was I will transcribe the abstract from the fly-leaf of my copy.

"Warder's method consists in keeping six colonies in a house; his boxes are octagonal, eighteen inches in diameter externally, and seventeen inches internally, two sides being formed of glass in a frame; the top is flat, and has a hole five inches square, capable of being closed by a slider; the height of the box is nine inches. One of the sides has a piece of tinned plate pierced with holes and covered by a slider to act as a ventilator when required in very hot weather. The door is four inches long, and able to be closed to any extent by a slide. These boxes are first stocked by placing straw hives in the bee-house, and raising them when populous on to the boxes. When the first box is filled a second is placed under it, and the straw hive removed, the bees being driven out into an empty hive, and then shaken out to fly home. The second year the upper box is removed in a similar manner. Swarms when required are insured in spring by limiting the colony to one box in the previous September. The mode of joining casts together and the advantage of one strong stock over two weak ones are very correctly described. The fact of the drones being males is correctly stated (a discovery usually attributed to Huber), and the age of the bee to be at longest but a year."

Such is a brief abstract of this most admirable old book, a work which contains by far a greater fund of good sense and practical information than many of the trashy compilations of the present day, written by men who have no practical knowledge of the subject, and who would as soon think of facing alone a regiment of revolted Sepoys as turning a hive of bees up and cutting out a piece of comb.

It will be seen that many subsequent discoveries were detailed in this work. Ventilation is described, and its use advocated to prevent the falling of comb in very hot weather, and not with the absurd crotchet of preventing brood in certain parts of the hive. *Driving*, which bee masters, such as Golding and others, employ at the present day (leaving sulphur, stinks, and stupefaction to bee keepers who are not bee masters), is correctly described; the true age of the workers; the sex of the drones; the advantage of joining weak stocks, and of putting three or four casts together; the mode of feeding inside the hives—all modern discoveries are most admirably described by one who had evidently practised what he wrote about. With very slight alterations Warder's method is almost identical with the most profitable system of the present day.

As to the profit derived from bee-keeping I find there is no difficulty in getting a market for any quantity of good virgin honey in the comb, such as is obtained from the top boxes of Stewarton hives, or from my own cheaply-made bar hives, at 2s. per pound (its wholesale price in Glasgow was recently 2s. 3d. per pound, and all at Stewarton has been sold). It must be a very bad system which would not yield in a good season, such as the present, 20 lbs. from a strong stock; and how many hives at that rate would be required

to produce Warder's £30 or £40 I leave to the calculation of my readers.

One friend who owns forty hives informs me that his honey will produce him between £50 and £60 this year, and many of his stocks are in common skeps, so that Warder's exaggeration is really assumed. I do not mean to say that in any system of collateral working, or such contrivances as Nutt's or Bagster's hives, or the ladies' playthings now so much vaunted as cottage hives, any such results can possibly be obtained; but with a good arrangement of storifying boxes, such as are recommended so strongly by Dr. Bevan in his "Lecture on Bee-keeping" (I am not alluding to his large work, "The Honey Bee"), as used up in the north in the form of Stewarton boxes, or as made with loose bars as I have employed them, such results are attainable. This I know, for I have obtained them repeatedly myself.

Should the abstract of Warder's book be regarded with any interest I may occasionally give a little description of some of the other older writers' works on this subject.

My edition of Warder's book is the seventh, published in 1742. Its title is, "The True Amazons, or the Monarchy of Bees, &c. London: Printed for T. LONGMAN at the Ship, in Pater-Noster-Row."—W. B. TEGETMEIER, *Tottenham*.

NOTES FROM THE CONTINENT—No. 11.

POTSDAM.

SOME persons, unmindful of the old proverb, "Comparisons are odious," have called Sans Souci "the Prussian Versailles:" the title is by no means an apt one, although it is a beautiful place. The name Sans Souci means literally *without care*, and if a king can ever throw off the cares of office we might fancy he could do it here. The palace, which was built rather more than a hundred years ago by Frederick the Great, stands upon an eminence, the slope to the south in front of it being cut into six terraces. The perpendicular walls are covered with tender climbing plants, Vines, &c., and in winter are covered with glass; the terraces are laid out with flower-beds on grass, and have a very beautiful appearance seen from the palace. The upper terrace is most profusely decorated with flowering plants in pots: everything from China Asters to Gloxinias seems to have been called into use here. Among them are placed young Palms and other plants with fine foliage, and the whole are shaded by splendid old standard Orange trees. Among the decorations here I was struck with the beautiful festoons carried from tree to tree. *Pelogyne suavis* (?) is the plant used for this purpose. Its flowers are inconspicuous, but it produces a most charming effect, and with no trouble, for it does not even require tying to the string which it covers. I have never seen it so used in England, though it is to be found in every garden here; but in no place have I seen it so beautiful as in Sans Souci. It is struck from cuttings every autumn, kept in an intermediate house in winter, and planted out in spring.

At the foot of the terraces are the water-works. The principal fountain throws a jet of water 130 feet high, and there are several others, which, although very pretty, are not to be compared with those at Versailles or at Sydenham. The avenues here are decorated with many statues and groups of figures.

To the left of the palace is a steep slope cut into a series of terraces, and planted with Figs and the finer sorts of Vine from Italy and Spain. They are covered with glass through winter and spring, and ripen their fruit well. On the opposite side of the palace is a new piece of ground, bearing the somewhat inappropriate name of "The Winter Garden." It is planted with Rhododendrons, Hollies, Conifers, and the like, nearly all of which must either be placed under glass or covered with straw during winter. The forcing garden, although the best in the neighbourhood, is by no means good. Upon the brow of a hill close by is the new orangery—a splendid building, more like a palace than a house for plants. It is 600 feet long, but is said to be none too large for the purpose. Standard Orange trees seem to be a necessary adjunct to every large garden, and they have above 500 here. Above the central part of the building are two towers, not yet finished, which will contain rooms for

the reception of the king, and from the windows command a most picturesque view.

Not many minutes' walk from this is a nursery garden belonging to the State, for the rearing of ornamental trees and shrubs. It was established many years ago, when the great number of public works in progress, such as the making of parks and new roads, all of which are planted with avenues, required more trees than could be obtained. At present it contains a good stock of all the best sorts of Conifers, &c. The forest trees are reared in another garden at some distance. I saw here a few plants of a very good dwarf Sunflower; they were not more than five feet high, bushy, and every shoot flowering. A rude fence was entirely covered with *Apios tuberosa*, producing its pink and brown papilionaceous flowers in profusion: so sweetly scented was it that its odour, even at midday, could be noticed at a great distance. Among other things here I saw some fine Mulberry trees, five feet high, though only two years' old, from eyes, struck like Vines; a prettily variegated Oak, from a shoot which had "sport" in the forest; a fine, large-flowered variety of *Spiræa callosa*, very desirable for shrubbery borders; and the white, Spiræa-like-flowered *Polygonum Sieboldii*, a good thing for bouquet making, and quite hardy.

Sans Souci is one of the principal resorts of the holiday people from Berlin. Besides its fine scenery, gardens, and fountains, its historical associations make it doubly interesting to every patriotic Prussian. It was the favourite abode of the great Frederick, "the good old Fritz." Upon those terraces he was fond of sitting to amuse the little leisure he allowed himself by playing the flute while surrounded by his pet dogs. In one of those rooms he died, wishing to be interred by the side of the horse which had carried him through so many battles, and which, with many of his dogs, lies buried on the upper terrace. I need hardly say this request was not complied with.—KARL.

ODDS AND ENDS ON BEE MATTERS.

MODE OF LOOSENING THE STING.

MANY persons may recollect reading the account of the combat of two queens, in which the victress is described as being at first unable to extract her sting, and ultimately extricating it by turning round and round upon it as a centre. A few days since I was attending to some hives early in the morning (I mention the time as the bees at that hour are not very waspish), when a bee suddenly issued out, and flew against my wrist, evidently more in surprise than anger. It stung, but not deeply. At first it was unable to extricate itself, when it commenced turning round, making about three turns in one direction. This, however, failed to loosen the sting, and it then reversed its movement, turning in the other direction. About two turns loosened the sting, and the bee walked over my hand with it protruded. After a few seconds it was drawn up into the body, and the bee flew away. I remarked afterwards that there was not as much irritation resulting as when the animal leaves the sting in the wound, and it has to be extracted by hand.

I am not about to argue that this proceeding is the result of any peculiar instinct, or still less any reasoning faculty. All animals confined in any mode endeavour to move in the only direction open to them. Thus a dog or goat tethered to a tree runs round and round; a cockchafer spitted on a pin makes the same gyratory movement; but in these cases the results are not so beneficial to the captive.

QUALITY OF THE STEWARTON HONEY.

As Mr. Wilson is describing the very successful working of the Stewarton boxes in Ayrshire, I have thought that the opinion of a southern regarding the character of the honey might not be wholly uninteresting. I have just received a 20 lb. box of honey from Stewarton, and find that the comb is of the finest possible colour, being as nearly white as it is possible for comb to be; in fact, I do not recollect ever seeing any so perfectly free from colour. I rather pride myself on my own ability to obtain supers of virgin comb free from brood or bee bread; but neither in the Stewarton hives nor in my own pattern bar hives have I

ever succeeded, either at Tottenham or elsewhere, in obtaining comb of such a degree of whiteness.

The box I have received had the combs unfortunately broken in travelling, otherwise I should certainly have retained it for inspection.

It is hardly necessary to state that the honey also is of a very superior character, being remarkably clear and colourless; and the entire box does not contain a single grub or cell filled with bee bread. Since writing the above I have received a letter from Mr. Eaglesham, who informs me that "the box was a fair average one as to colour. There were scores of equal quality and larger boxes taken in this locality this season."

RESULT OF PLACING THE SWARM IN THE SITUATION OF THE OLD STOCK.

Those bee-keepers who were readers of THE COTTAGE GARDENER some five years since must recollect the suggestive and interesting letters of a contributor who signed himself "A COUNTRY CURATE." This gentleman, who is now in Australia, was a strong advocate for the plan of placing the newly-hived swarm in the situation of the hive from whence it issued, the advantages claimed for the plan being that it depopulated to a greater extent than usual the old stock, and so prevented *casting*, and correspondingly strengthened the new swarm. To these advantages another may be added, namely, that if good-sized pieces of guide-comb are fixed to the bars of the hive, and the swarm placed in its position as soon as the queen has taken possession, the bees will go to work directly, and collect a considerable proportion of honey and bee bread the first day—no small advantage if the two or three subsequent ones happen to be unfavourable, the swarming day of a first swarm being always favourable.

With regard to the influence of the plan in preventing *casting*, my belief is that it does so generally, but not in all cases, for this season I have had a cast from an old stock that had been shifted after swarming.—W. B. TEGETMEIER.

ORIGINAL DOMESTIC RECEIPTS.

PUMPKIN BATTER.—Wash the pumpkins clean, take out the seeds, and scrape the inside out with a strong iron spoon. Boil till soft, and rub it through a coarse sieve. When strained put into a kettle and boil slowly all day, stirring it often. Put in a large handful of salt. When nearly done add a pint of molasses, or a pound of brown sugar, to each gallon of pumpkin. Before it is quite done add allspice, cinnamon, ginger, and nutmeg, one or all, as you may fancy. Put it into jars when done—large ones are best. Tie it up tightly, and it will keep until April or May in a cold place if you scald it when spring comes on. It is a good sauce for table use, and is always ready for pies, with the usual addition of eggs and milk. It is much less trouble and far better than "dried pumpkin."

TO BAKE APPLES.—Gouge out the eyes and fill them with sugar; set the apples in a pie plate, pour in a tea-cupful of water, and bake. Eat with cream and the juice found in the dish when done.

DELICATE CAKE.—Add to the whites of sixteen eggs, beaten to a stiff froth, three-fourths of a pound of flour, one pound of sugar, ten ounces of butter. Flavour with lemon or rose water.

GINGER COOKIES.—One cup of sugar, one of butter, one of molasses, one table-spoonful of ginger, one of cinnamon, and two tea-spoonful of saleratus dissolved in three table-spoonful of hot water. Bake quickly.

RYE DROP CAKES.—One pint of milk, three eggs, one table-spoonful of sugar, and a little salt. Stir in rye flour till about the consistency of pancakes. Bake in buttered cups or saucers half an hour.

HONEY CAKE.—One cup of nice sugar, one cup of rich sour cream, one egg, half a tea-spoonful of soda, two cups of flour. Flavour to the taste. Bake half an hour. To be eaten while warm.

PROPOLIS.

BEES do not secrete propolis as they do wax; it seems to be a tenacious substance which they collect from trees or plants, and carry home on their thighs as they do pollen. But the pellets of the propolis are not of so fine a ball shape as those of the latter, and vary in colour from pale ash to yellowish red, which may be owing to their being mixed with dust or farina from the bees. We cannot state with certainty how they collect propolis. Some assert that bees gather it from Poplar buds and the gummy ones of Horse Chestnuts, &c.; but we never observed them about these, nor extracting it from the buds of any other trees. They certainly gather something from the young shoots of common Laurel, which may be material for secreting wax. In hot weather propolis emits a strong scent from bee-hives very like that from Scotch Firs during hot sunshine; but it cannot be the resin which oozes from those trees, for, unless the bees mixed it with pollen or something else, they could not free themselves from a substance so adhesive. When bees enter the hive with propolis others readily take it from their thighs. Besides, bees collect propolis in districts where none of these trees grow; therefore other trees or plants must contain it. It seems to exude from them by heat, and does not melt in boiling water like wax. Propolis may be called the cement of bees, for they varnish their cells and fill up all little crevices in their hive with it. Perhaps without a portion of that tenacious substance they could not make their combs; at least, it gives the whole of their structures a firm texture. Unfinished cells are very brittle; and we suspect that when combs collapse with heat, while other hives in the same degree of heat are not affected, the mishap may be owing to a deficiency of propolis in the combs. The term is derived from the Greek, and means "protection of the city;" therefore we give this opinion with some confidence.—J. WIGHTON.

QUERIES AND ANSWERS.

PARTIAL FAILURE OF POTATOES.

"In a field this year I planted the following sorts of Potatoes:—

"1. Champion. 2. Regents. 3. Goldfinders. 4. Fluke Kidneys. 5. Lapstones. 6. Axbridges.

"1, 2, and 3 yielded a very fair crop; 4, 5, 6 entirely failed, not through disease, but simply from not producing any tubers. Can you give me any reason for this?"—H. N. E.

[We cannot assign any reason for the failure of 4, 5, and 6 Potatoes if the soil in the field was of equal quality throughout, and the Potatoes were all planted at the same time, unless the seed of 4, 5, and 6 was of very inferior quality. Had it sprouted, and the sprouts been removed?]

COLOUR OF WALL BEHIND WHITE FLOWERS.

"I have a fine *Hoya bella* trained to the back wall of my stove, and as the wall is whitewashed, and the flowers nearly the same colour, I have a difficulty in seeing them. Can you suggest some method that will remove the difficulty, or name some colour to paint the wall that would be a good contrast with the leaves and flowers?"—BLURTON.

[As white flowers agree with every shade of colour in the spectrum why not colour the wall with that which pleases your own eye best? Black and green agree very well, and black is the contrast to white. Mix lamp-black with a little whiting, and colour the wall a very dark grey behind the *Hoya*.]

AN APIARIAN DILEMMA.

"Will you give me a little advice as to the management of my bees under the following circumstances? Last February a strong hive was sent to me. I had a bee-house, but no bees. The shelf, as I suppose is usual, has a passage in it for them to pass from one hive to another. I was ill at the time they arrived, and they were placed within the house. The hive, however, was rather small, and did not cover the outlet on one side; the consequence has been,

although they have filled a side box, yet they also remain between that and the centre hive. I have taken no honey, as I am anxious to increase my stock."—A SUBSCRIBER, *Oswestry*.

[It is rather difficult to learn from your description what is the true position and prospect of your stock. You do not state what kind of hive it is, but it may be inferred from your expression, "a side box," that it is a set of collateral boxes, placed upon what Mr. Taylor terms a "doubling-board" ("Bee-keeper's Manual," p. 74, 5th edition), in which the mode of communication from box to box is by means of a hollow passage made within the floor-board. If our guess is correct we should be inclined to recommend taking away the side box or boxes, and compelling the family to remain for the winter in the centre or stock hive. The blunder, however, must be corrected of "not covering the outlet on one side," which, if the hive is too small, must be done by means of a piece of board. If the centre or stock box is not well furnished with honey, which the weight will tell you, part or the whole of the contents of the side box can be given to it by feeding, so as to insure a sufficiency till the spring. We are not sure that we understand the expression about the bees "remaining between that (the centre) and the outer hive;" but, at all events, they must be got into one box, closing all openings or communications but the central outer entrance door. You are under a mistake in supposing that it is "usual" for the shelf to have "a passage in it to pass from one hive to another," though this mode of construction sometimes answers the end in view, and is manageable enough with suitable hives.]

TO CORRESPONDENTS.

HEDGE AT KEW (W. S. W.).—If you mean the hedge which incloses the American garden, it is formed of Yew.

LARGE GOURD (W. M.).—That five feet ten inches in circumference, growing in the Grove End Road, is not an unusual size. There are no prizes anywhere offered for Gourds or Pumpkins. They are of no use except to make into soup, or to be boiled and mashed like Turnips.

STORING APPLES, &c. (R. L. G.).—Your wishes were anticipated last week.

VINES FOR GREENHOUSE (C. Bailey, Hampstead).—Your queries were answered at page 352. The initials by mistake are given as to "A. B." If you need more information write again.

NAMES OF PLANTS (W. S.).—No. 1, *Halesia tetraptera*. No. 2, *Euonymus atro-purpureus*. (A Constant Reader).—1. *Alstromeria pittacina*. 2. A *Franciscea* or *Brunsfelsia*: specimen damaged. 3. A *Bignoniad*, but too imperfect to ascertain even the genus. 4. *Diosma ericoides*. (J. T. Loxley).—1. *Adiantum pubescens*. 2. *Cheilanthes micromera*. 3. *Doodia caudata*. 4. *Asplenium latum*. (J. S.).—The Star Thistle, *Centaurea calcitrapa*; rather uncommon. (Wm. C.).—*Galium saxatile*, one of the Lady's Bedstraws.

BUTTERFLIES (Kate).—The best book is the quarto edition of Westwood's "British Butterflies." The insects, their caterpillars, and the plants they are found on, are all coloured. A low-priced work with coloured illustrations cannot be published.

ARAUCARIA EXCELSA (F. E. B.).—This, the Norfolk Island Pine, would be killed at Sydenham, though protected by mats in the winter.

PAMPAS GRASS.—An Old Subscriber informs us that a splendid specimen of the Pampas Grass, twenty-five feet in circumference, with twenty spikes of flowers twenty feet high (!), is now flowering at Chelsea. No doubt the warm summer has caused it to flower and grow so beautifully.

LAWNS (T. Spencer).—There is no separate work on laying out lawns. The lawn people in the world are not ripe for such a book, nor yet in leaf or blossom, but the buds of such a state of society as will necessitate such a book are just beginning to swell. Speculating builders have the monopoly of making lawns in our days, and will hold it till the second and third generations from London and other large towns begin to see the absurdities in the latter half of the nineteenth century.

GASTRONEMA CLAVATUM (W. J. W.).—If you bought this bulb on the authority of THE COTTAGE GARDENER, pray send us the name of the seller with your card, and we shall publish his name, but not yours. Your bulb has no affinity to a *Gastronema*. A 48-pot is quite large enough to grow and flower five bulbs of *Gastronema clavatum* for thirty years at least. *Gastronemas* die down invariably every year. There are only two, or perhaps three, nurserymen that we know of in these kingdoms who would recognise *Gastronema clavatum*, even if it were in flower. Two or three of our amateur correspondents know it very well, and some of them grow and flower it, but there are not ten gardeners in Europe who would know it in any stage of its growth. It is a rare Cape bulb, not bigger than a large Crocus, and belongs to the *Cyrtanthiform*, or curved-tubed *Amaryllois* tribe. Your bulb is some *Crinum*, or perhaps a villanously ugly *Ornithogalum*. Both kinds soon burst their pots.

WINTERING PIT (Cruz).—You cannot do better, as you propose, than copy the structure at page 24 of "Greenhouses for the Many," omitting the side aisles. If you lower the walls, however, you must sink the path deeper, or you will not have head room. Use a furnace and flue certainly.

INSECTS (Reldas).—Your fruit wall wants repointing, so that the

woodlice cannot harbour in the crevices, for there are broods of these vermin which consume your fruit. A brood or two of chickens turned into the garden will soon clear the foot of the wall from such of these pests as harbour there.—W.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

OCTOBER 1st and 2nd. WORCESTER. Sec., Mr. G. Griffiths, 7, St. Swithin Street, Worcester. Entries close Sept. 19th.

OCTOBER 7th. SOUTH WEST MIDDLESEX AGRICULTURAL SOCIETY. At Gunnersbury Farm, Ealing. Sec., J. Gotelee, Hounslow.

OCTOBER 8th. BUCKS AGRICULTURAL SOCIETY. Sec., Mr. Charles Fuller, Chiltern House, Wendover, Bucks. Entries close Sept. 24.

OCTOBER 8th. BRIDGNORTH. Sec., Mr. R. Taylor, Bridgnorth. Entries close 1st of October.

OCTOBER 28th and 29th. DORSETSHIRE. Sec., G. J. Andrews, Esq., Dorchester. Entries close October 14th.

NOVEMBER 30th, and December 1st, 2nd, and 3rd. BIRMINGHAM. Sec., John Morgan. Entries close the 2nd of November.

DECEMBER 16th and 17th. NOTTINGHAMSHIRE. Entries close November 18th. Hon. Sec., Mr. R. Hawksley, jun., Southwell.

DECEMBER 30th and 31st. BURNLEY AND EAST LANCASHIRE. Entries close December 1st. Secs., Mr. Angus Sutherland and Mr. Ralph Landless.

JANUARY 1st, 1858. PAISLEY. Poultry, Pigeons, and Fancy Birds. Sec., Mr. W. Houston, 14, Barr Street, Paisley.

JANUARY 4th, 1858. KIRKCALDY POULTRY AND FANCY BIRD SHOW. Sec., Mr. Bonthron, jun., Thistle Street.

JANUARY 9th, 11th, 12th, and 13th, 1858. CRYSTAL PALACE. ham.

JANUARY 19th, 20th, 21st, and 22nd, 1858. NOTTINGHAM CENTRAL. Sec., Mr. Etherington, jun., Notintone Place, Sneinton, near Nottingham.

FEBRUARY 3rd and 4th, 1858. PRESTON AND NORTH LANCASHIRE. Secs., Mr. R. Teebay and Mr. H. Oakey, Preston.

N.B.—Secretaries will oblige us by sending early copies of their lists.

AMERICAN HEN-HOUSE.

"A fowl-house," says Mr. Browne, "should be dry, well roofed, and fronting the east or south; and, if practicable, in a cold climate; it should be provided with a stove, or some other means for heating, warmth being very conducive to health and laying, though extreme heat has the contrary effect. The dormitory, or roost, should be well ventilated by means of two latticed windows at opposite ends of the building; and it would be desirable to have one or more apertures through the roof for the escape of foul air. The sitting apartment, also, should be ventilated by means of a large window in the side of the house, and holes through the ceiling or roof. If kept moderately dark it will contribute to the quietude of the hens, and thus favour the process of incubation. The sitting room should be provided with boxes or troughs, well supplied with fresh water, and proper food for the hens during the hatching period, from which they can partake at all times at will. The laying room in winter should have similar boxes or troughs containing old mortar, broken oyster shells, soot, brick dust, gravel, and ashes, as well as a liberal supply of proper food and drink. The perches, or roosting poles, should be so arranged that one row of the fowls should not rest directly over another. They should be so constructed as to enable the fowls to ascend and descend by means of ladders or steps, without making much use of their wings; for heavy fowls fly up to their roosts with difficulty, and often injure themselves by descending, as they alight heavily upon the ground.

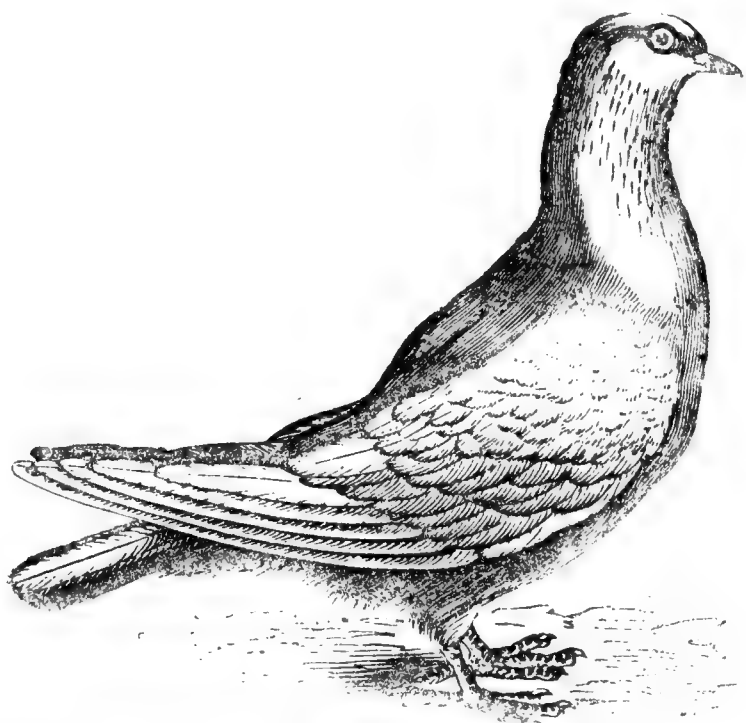
"We have a hen-house 20 feet long, 12 feet wide, and 7 feet high to the eaves, with a roof of a 7-foot pitch, a chimney top, a ventilator on the peak, 12 feet in length and 1 foot or more in height, and openings in the gable ends for the admission of fresh air. In the easterly end there are two doors, one leading into the laying apartment and loft, and the other into the hatching room. In the same end there is also a wooden shutter or blind, which may be opened whenever necessary to let air or light into the roost. In the back, or northerly side, there is a large lattice window, 3 feet apart above the floor or ground, 4 by 12 feet, for the purpose of affording fresh air to the sitting hens. In front, or southerly side, there is a large glazed window, 4 by 12 feet, and another on the southerly side of the roof, of a corresponding size, designed to admit light and heat of the sun in cold weather, to stimulate the laying hens. In the southerly side there are also two small apertures three feet above the ground or floor, for the ingress and egress of the fowls. These openings may be provided with sliding shutters, as well as with 'lighting boards,' inside and out, and may be

guarded by sheets of tin, nailed on below them, to prevent the intrusion of rats, weasels, or skunks.

"The building may be constructed of wood or other materials, and in such style or order of architecture as may suit one's taste, only preserving the internal arrangements and proportions in reference to breadth and height. As a general rule, as regards the length of a building, each hen, irrespective of the cocks, may be allowed a foot."—(*The Genesee Farmer.*)

PIGEONS.

CLASS 11.—MESSENGER PIGEONS.



VARIETY 1. THE ANTWERP CARRIER (*Columba tabellaria Antwerpianæ*).

French.

German.

PIGEON VOYAGEUR D'ANVERS. ANTWERPEN POST TAUBE.

THE pure Antwerp Carrier is a very rare variety of Pigeon, and the most valuable of any known sort as Messengers. The true Antwerp is, I am credibly informed, derived from a small variety of mealy or strawberry-coloured Rock Pigeon, which nestles in the old towers and venerable steeples of the ancient city of Antwerp, in Belgium. I do not suppose that these wild Antwerp Pigeons are an indigenous race, but simply the descendants of tame Pigeons that have lost their homes, and betaken themselves to these elevated abodes, where they breed in a comparative state of nature. The Belgians have been long noted for their passion of flying Pigeons, and such having escaped the control of man, and having for many generations been obliged to seek their subsistence at a considerable distance from the city, and often to run the gauntlet with the sportsmen and numerous birds of prey, it is not surprising that from their remnant a race should spring up of exceedingly wild nature, and pre-eminently adapted for finding their way home from almost incredible distances. These Pigeons are but few in number, and the young have been sought and reared by those who delight in flying Pigeon matches in Antwerp; and the homing faculty appears so innate to the breed, that persons accustomed to train the tamer and more tractable varieties can scarcely credit with what small amount of training these very wild birds become proficient, and from their nature it is almost impossible to settle them to a new abode, or even to induce them to breed away from the place of their choice.

Their plumage is mostly mealy, with reddish bars across the wings, and a reddish shade about the neck; they are of small size, resembling the Blue Rock Pigeon in form; the beak is slender and dove-shaped; the eye prominent and of a pale gravel or reddish pearl colour; the forehead is rather full and rounded; and the whole appearance and demeanour very wild. This variety is scarcely known in England except by name, and the mongrels or crosses which we sometimes meet with. Indeed, so choice are the few persons that keep them that they rarely can be induced to part with them, and so wild and restless are the birds in a strange place that it would be a rare occurrence for them to breed there; their wild nature and the indomitable desire to return to their

native home cause them to be ever on the alert to escape; and should they be confined securely for a year, or even more, they will frequently at the expiration of that time, from their shy, restless disposition, be found willing and capable of returning to their old abode, though the journey may be one or two hundred miles.—B. P. BRENT.

OUR LETTER BOX.

TO CORRESPONDENTS.—Owing to our day of publication falling so near the end of the month we are obliged to go to press earlier, and several communications are necessarily omitted.

GREY LINNET, TWITE, AND REDPOLE (*T. Wrench*).—It is usual for these birds to lose the red colour they possess in a wild state when in confinement. The Grey Linnet is also called Red or Rose Linnet, from the rosy red colour of the cock's breast. In autumn, when the birds moult, these red feathers have a brown edging; but as spring advances, and the weather becomes warmer, they not then requiring so much plumage, these brown edgings wear off, and expose the beautiful rosy breasts of the males. The Twite, also called Moor Linnet and French Linnet, has also a rosy tint on the breast in spring, and a red spot on the rump of the male. The Redpole male has likewise a rosy shade on the breast; and both male and female have a deep red spot on the head. In confinement, when these birds moult this red colour is lost. The Linnet's and Twite's breasts assume a brown shade, while that of the Redpole changes to a yellow tint; and the spot on his head to a golden or bronzy colour. I attribute this change of colour in captivity to their not obtaining the same kind of food at moulting time as they would do if at liberty in their native haunts.—B. P. BRENT.

GAME FOWLS AT THE BURLINGTON AND DRIFFIELD POULTRY EXHIBITIONS.—"At the above-mentioned Shows I was greatly struck at seeing that the first prize was both times awarded to a bird with a white sickle feather in his tail; more especially was I astonished when I saw other birds better in every point except the white feather. I now wish to have the opinion of other Game fanciers whether this be a qualification or not. If it be a qualification, it is a curious thing that in all my poultry career I never before have heard of its being considered so, but always the opposite. I could not let such a mistake either on my part or that of the Judges pass unmentioned. One of us must be labouring under a mistake; and I shall be glad if some experienced breeders will be kind enough to give an opinion on the subject."—A YORKSHIRE AMATEUR.

POLANDS.—"I shall be very much obliged to you to inform me in your next paper what I can do for a Poland hen who has lost her feathers on her neck. Directly after I bought her last winter the feathers down her neck broke off, so that it was left quite bare. In this state she remained all the summer; and, although the moulting time is come, there is no vestige of a feather on her neck, and her back is nearly as bare. Will you be so good as to tell me if I can put anything on to make the feathers grow again? She is fed on whole and ground corn, one meal of each every day, and has a healthy run, with abundance of green food. I believe some people fancy Polanders are delicate chickens to rear. I can, as far as my experience goes, fully contradict it as regards the Gold and Silver, as I never find the least difficulty in rearing them; indeed, there is much less trouble with them than with any others. Not having much room, I had only fifty-two of them hatched this year; three of them were killed by accident, and one only died, which was very weakly from the shell. At fifteen or sixteen weeks old they were perfectly fit for the table, and quite equal to the Dorkings in the delicacy of their flesh."—GOLDEN LOCKS.

[Rub the neck and back of the Poland hen with sulphur ointment, and give her a Plummer's pill twice a week. This will aid her recovery of the feathers if there is any affection of the skin causing the baldness. If the hen is very old, or out of condition, it may be only slow moulting. In that case feed her generously, and give her a little bread soaked in ale occasionally.]

MERTHYR TYDFIL SHOW.—"I have only just seen THE COTTAGE GARDENER for August 25th, and am surprised, from reading the report of our Poultry Show held at Merthyr, to learn that old and young birds were classed together. I beg to correct this error; they were not classed together, but we had two distinct prizes for old birds and two of half the amount for young birds. I must also inform you I there exhibited two pens of old Spanish birds, one of which was highly commended, the other took the first prize. I would also, as an exhibitor and as one of the Committee, ask why the pigeons were left out altogether, because in all shows they are more attractive than almost any other birds. I must inform you we had some beautiful pigeons shown, and that I took all the first and second prizes for pigeons, namely, six. I only entered seven pairs, and took prizes as follows, namely, first and second for Black and Blue Carriers, first and second for Tumblers, Balbs, and Beards, and first and second for Trumpeters. I do not know who reported this successful Show. Surely these things ought to be reported, and not the pigeons left out altogether."—GEORGE WARREN, High Street, Merthyr Tydfil.

[It appears I did not make myself clearly understood in my report of the Merthyr Tydfil Poultry Show. Although separate prizes were offered for adults and chickens, and were awarded, as the prize-list will show, four premiums in almost every class, yet they were not separately classed in the pens, but chickens and adults were mixed up. The omission of the pigeons was accidental, and I apologise for it. I am enabled on the best authority to say that the Exhibition was eminently successful.—YOUR REPORTER.]

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published for the Proprietors at THE COTTAGE GARDENER OFFICE, No. 20, Paternoster Row, in the Parish of Christ Church, City of London.—September 29, 1857.

